Legacy Contract No. 12-5SDP5124
Peoplesoft Contract No. 5003

THE STATE OF TEXAS §

COUNTY OF TRAVIS §

CONTRACT FOR ENGINEERING SERVICES
Cost Plus Fixed Fee,
Unit Cost, Lump Sum, or Specified Rate
Specific Deliverable with Work Authorizations

THIS CONTRACT FOR ENGINEERING SERVICES is made by and between the State of Texas acting by and through the Texas Department of Transportation, 125 E. 11th St., Austin, Texas 78701, hereinafter called "State," and **AECOM Technical Services, Inc.**, having its principal business address at **5444 Westheimer Rd, Suite 200, Houston, Texas, 77056** hereinafter called "Engineer," for the purpose of contracting for engineering services.

WITNESSETH

WHEREAS, Government Code, Chapter 2254, Subchapter A, "Professional Services Procurement Act," provides for the procurement of engineering services; and

WHEREAS, 43 Texas Administrative Code §9.30 et seq. establishes the Texas Department of Transportation's policies and procedures for contracting for engineering services; and,

WHEREAS, the State desires to contract for engineering services generally described as **the work to be performed by the Engineer shall consist of providing engineering services required for the preparation of plans, specifications and estimates (PS&E) and related documents, for SH 36 from Fort Bend County line in the north to 0.355 miles north of SH 35, in Brazoria County. These services may include preparing roadway and bridge design, hydrologic and hydraulic design, traffic signal design, survey, traffic control plans, if requested, provide design support and testify as the engineer of record at Right-of-Way hearings, and construction phase services necessary to support the design process for SH 36**; and,

WHEREAS, the State has selected the Engineer to provide the needed services and the Engineer has agreed to provide the services subject to the terms and conditions hereinafter set forth.

NOW, THEREFORE, the State and the Engineer, in consideration of the mutual covenants and agreements herein contained, do hereby mutually agree as follows.

AGREEMENT

ARTICLE 1. SCOPE OF SERVICES. The State and the Engineer will furnish items and perform those services for fulfillment of the contract as identified in Attachment B, Services to be Provided by the State and Attachment C, Services to be Provided by the Engineer. All services provided by the Engineer will conform to standard engineering practices and applicable rules and regulations of the Texas Engineering Practices Act and the rules of the Texas Board of Professional Engineers.

ARTICLE 2. CONTRACT PERIOD. This contract becomes effective when fully executed by all parties hereto and it shall terminate at the close of business on **November 30, 2019** unless the contract period is: (1) modified by written supplemental agreement prior to the date of termination as set forth in Attachment A, General Provisions, Article 6, Supplemental Agreements; (2) extended due to a work suspension as provided for in Attachment A, Article 3, Paragraph C; or (3) otherwise terminated in accordance with Attachment A, General Provisions, Article 15, Termination. Any work performed or cost incurred before or after the contract period shall be ineligible for reimbursement.

ARTICLE 3. COMPENSATION.
A. Maximum Amount Payable. The maximum amount payable under this contract without modification is

shown in Attachment E, Fee Schedule. Payment under this contract beyond the end of the current fiscal biennium is subject to availability of appropriated funds. If funds are not appropriated, this contract shall be terminated immediately with no liability to either party.

B. Basis of Payment. The basis of payment is identified in Attachment E, Fee Schedule. Reimbursement of costs incurred under a work authorization shall be in accordance with Attachment E, Fee Schedule.

C. Reimbursement of Eligible Costs. To be eligible for reimbursement, the Engineer's costs must (1) be incurred in accordance with the terms of a valid work authorization; (2) be in accordance with Attachment E, Fee Schedule; and (3) comply with cost principles set forth at 48 CFR Part 31, Federal Acquisition Regulation (FAR 31). Satisfactory progress of work shall be maintained as a condition of payment.

D. Engineer Payment of Subproviders. No later than ten (10) days after receiving payment from the State, the Engineer shall pay all subproviders for work performed under a subcontract authorized hereunder. The State may withhold all payments that have or may become due if the Engineer fails to comply with the ten-day payment requirement. The State may also suspend the work under this contract or any work authorization until subproviders are paid. This requirement also applies to all lower tier subproviders, and this provision must be incorporated into all subcontracts.

ARTICLE 4. PAYMENT REQUIREMENTS

A. Monthly Billing Statements. The Engineer shall request reimbursement of costs incurred by submitting the original and one copy of an itemized billing statement in a form acceptable to the State. The Engineer is authorized to submit requests for reimbursement no more frequently than monthly and no later than ninety (90) days after costs are incurred.

B. Billing Statement. The billing statement shall show the work authorization number for each work authorization included in the billing, the total amount earned to the date of submission, and the amount due and payable as of the date of the current billing statement for each work authorization. The billing statement shall indicate if the work has been completed or if the billing is for partial completion of the work. The fixed fee will be paid in proportion to the percentage of work completed per work authorization.

C. Overhead Rates. The Engineer shall use the provisional overhead rate indicated in Attachment E. If a periodic escalation of the provisional overhead rate is specified in Attachment E, the effective date of the revised provisional overhead rate must be included. For lump sum contracts, the overhead rate remains unchanged for the entire contract period.

D. Thirty Day Payments. Upon receipt of a billing statement that complies with all invoice requirements set forth in this Article, the State shall make a good faith effort to pay the amount which is due and payable within thirty (30) days.

E. Withholding Payments. The State reserves the right to withhold payment of the Engineer's billing statement in the event of any of the following: (1) If a dispute over the work or costs thereof is not resolved within a thirty day period; (2) pending verification of satisfactory work performed; (3) the Engineer becomes a delinquent obligor as set forth in Section 231.006 of the Family Code; (4) required reports are not received; or (5) the State Comptroller of Public Accounts will not issue a warrant to the Engineer. In the event that payment is withheld, the State shall notify the Engineer and give a remedy that would allow the State to release the payment.

F. Required Reports.

(1) As required in Attachment H, Disadvantaged Business Enterprise or Historically Underutilized Business Program Requirements, the Engineer shall submit Progress Assessment Reports to report actual payments made to Disadvantaged Business Enterprises or Historically Underutilized Businesses. One copy shall be submitted with each billing statement and one copy shall be submitted to the address included in Attachment H, Disadvantaged Business Enterprise or Historically Underutilized Business Program Requirements.

(2) Prior to contract closeout, the Engineer shall submit a Final Report (Exhibit H-4) to the address set forth in Attachment H.

(3) The Engineer shall submit a separate report with each billing statement showing the percent completion of the work accomplished during the billing period and the percent completion to date, and any additional written report requested by the State to document the progress of the work.

G. Subproviders and Suppliers List. Pursuant to requirements of 43 Texas Administrative Code §9.50 et seq., the Engineer must provide the State a list (Exhibit H-5/DBE or Exhibit H-6/HUB) of all Subproviders and suppliers that submitted quotes or proposals for subcontracts. This list shall include subproviders and suppliers names, addresses, telephone numbers, and type of work desired.

H. Debt to the State. If the State Comptroller of Public Accounts is prohibited from issuing a warrant or initiating an electronic funds transfer to the Engineer because of a debt owed to the State, the State shall apply all payment due the Engineer to the debt or delinquent tax until the debt or delinquent tax is paid in full.

I. Audit. The state auditor may conduct an audit or investigation of any entity receiving funds from the state directly under the contract or indirectly through a subcontract under the contract. Acceptance of funds directly under the contract or indirectly through a subcontract under this contract acts as acceptance of the authority of the state auditor, under the direction of the legislative audit committee, to conduct an audit or investigation in connection with those funds. An entity that is the subject of an audit or investigation must provide the state auditor with access to any information the state auditor considers relevant to the investigation or audit.

ARTICLE 5. WORK AUTHORIZATIONS. The State will issue work authorizations using the form included in Attachment D (Work Authorizations and Supplemental Work Authorizations) to authorize all work under this contract. The Engineer must sign and return a work authorization within seven (7) working days after receipt. Refusal to accept a work authorization may be grounds for termination of the contract. The State shall not be responsible for actions by the Engineer or any costs incurred by the Engineer relating to work not directly associated with or prior to the execution of a work authorization. Terms and conditions governing the use of work authorizations are set forth in Attachment A, General Provisions, Article 1.

ARTICLE 6. SIGNATORY WARRANTY. The undersigned signatory for the Engineer hereby represents and warrants that he or she is an officer of the organization for which he or she has executed this contract and that he or she has full and complete authority to enter into this contract on behalf of the firm. These representations and warranties are made for the purpose of inducing the State to enter into this contract.

ARTICLE 7. All notices to either party by the other required under this agreement shall be delivered personally or sent by certified or U.S. mail, postage prepaid, addressed to such party at the following addresses:

Engineer:	**State:**
AECOM Technical Services, Inc. 54444 Westheimer Road, Suite 200 Houston, Texas, 77056 James Squire	Director, Professional Engineering Procurement Services Texas Department of Transportation 125 E. 11th Street Austin, Texas 78701

All notices shall be deemed given on the date so delivered or so deposited in the mail, unless otherwise provided herein. Either party may change the above address by sending written notice of the change to the other party. Either party may request in writing that such notices shall be delivered personally or by certified U.S. mail and such request shall be honored and carried out by the other party.

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ARTICLE 8. INCORPORATION OF PROVISIONS. Attachments A through H are attached hereto and incorporated into this contract as if fully set forth herein.

IN WITNESS WHEREOF, the **State** and the **Engineer** have executed this contract in duplicate.

THE ENGINEER

(Signature)
James Squire
(Printed Name)
Business Unit Leader- Transportation
(Title)
1/11/16
(Date)

THE STATE OF TEXAS

DocuSigned by:
William L. Hale, P.E.
(Signature)
William L. Hale, P.E.
(Printed Name)
Chief Engineer
(Title) 1/29/2016
(Date)

Attachments and Exhibits to Contract for Engineering Services
Incorporated into the Contract by Reference

Attachments	Title
A	General Provisions
B	Services to Be Provided by the State
C	Services to Be Provided by the Engineer
D	Work Authorization and Supplemental Work Authorization
E	Fee Schedule
F	Work Schedule
G	Computer Graphics Files for Document and Information Exchange, if applicable
H-FG	Disadvantaged Business Enterprise (DBE) for Federal Funded Professional or Technical Services Contracts – See Attachment H Instructions **N/A**
H – FN	Disadvantaged Business Enterprise (DBE) for Race-Neutral Professional or Technical Services Contracts – See Attachment H Instructions **N/A**
H – SG	Historically Underutilized Business (HUB) Requirements for State Funded Professional or Technical Services Contracts – State of Texas HUB. Subcontracting plan required – See Attachment H Instructions
H – SN	Historically Underutilized Business (HUB) Requirements for State Funded Professional or Technical Services Contracts – No State of Texas HUB **N/A**
Exhibits	**Title**
H – 1	Subprovider Monitoring System Commitment Worksheet
H – 2	Subprovider Monitoring System Commitment Agreement
H – 3	Monthly Progress Assessment Report **N/A**
H - 4	Subprovider Monitoring System Final Report
H - 5	Federal Subproviders and Supplier Information **N/A**
H - 6	HUB Subcontracting Plan (HSP) Prime Contractor Progress Assessment Report

ATTACHMENT A

GENERAL PROVISIONS

INDEX TO PROVISIONS

ATTACHMENT A

GENERAL PROVISIONS

ARTICLE 1. WORK AUTHORIZATIONS

A. Use. The Engineer shall not begin any work until the State and the Engineer have signed a work authorization. Costs incurred by the Engineer before a work authorization is fully executed or after the completion date specified in the work authorization are not eligible for reimbursement. All work must be completed on or before the completion date specified in the work authorization, and no work authorization completion date shall extend beyond the contract period set forth in Article 2 of the contract (Contract Period).

B. Contents. Each work authorization will include: (1) types of services to be performed; (2) a period of performance with a beginning and ending date; (3) a full description of the work to be performed; (4) a work schedule with milestones; (5) a cost not to exceed amount, (6) the basis of payment whether cost plus fixed fee, unit cost, lump sum, or specified rate; and (7) a work authorization budget calculated using fees set forth in Attachment E, Fee Schedule. The Engineer is not to include additional contract terms and conditions in the work authorization. In the event of any conflicting terms and conditions between the work authorization and the contract, the terms and conditions of the contract shall prevail and govern the work and costs incurred.

C. Work Authorization Budget. A work authorization budget shall set forth in detail (1) the computation of the estimated cost of the work as described in the work authorization, (2) the estimated time (hours/days) required to complete the work at the hourly rates established in Attachment E, Fee Schedule; (3) a work plan that includes a list of the work to be performed, (4) a stated maximum number of calendar days to complete the work, and (5) a cost-not-to-exceed-amount or unit or lump sum cost and the total cost or price of the work authorization. The State will not pay items of cost that are not included in or rates that exceed those approved in Attachment E.

D. No Guaranteed Work. Work authorizations are issued at the discretion of the State. While it is the State's intent to issue work authorizations hereunder, the Engineer shall have no cause of action conditioned upon the lack or number of work authorizations issued.

E. Incorporation into Contract. Each work authorization shall be signed by both parties and become a part of the contract. No work authorization will waive the State's or the Engineer's responsibilities and obligations established in this contract. The Engineer shall promptly notify the State of any event that will affect completion of the work authorization.

F. Supplemental Work Authorizations. Before additional work may be performed or additional costs incurred, a change in a work authorization shall be enacted by a written supplemental work authorization in the form identified and attached hereto as Attachment D. Both parties must execute a supplemental work authorization within the period of performance specified in the work authorization. The State shall not be responsible for actions by the Engineer or any costs incurred by the Engineer relating to additional work not directly associated with the performance or prior to the execution of the work authorization. The Engineer shall allow adequate time for review and approval of the supplemental work authorization by the State prior to expiration of the work authorization. Any supplemental work authorization must be executed by both parties within the time period established in Article 2 of the contract, (Contract Period). Under no circumstances will a work authorization be allowed to extend beyond the contract's expiration date or will the total amount of funds exceed the maximum amount payable set forth in Article 3A of the contract (Compensation).

F-1. More Time Needed. If the Engineer determines or reasonably anticipates that the work authorized in a work authorization cannot be completed before the specified completion date, the Engineer shall

promptly notify the State. The State may, at its sole discretion, extend the work authorization period by execution of supplemental authorization, using the form attached hereto as Attachment D.

F-2. Changes in Scope. Changes that would modify the scope of the work authorized in a work authorization must be enacted by a written supplemental work authorization. The Engineer must allow adequate time for the State to review and approve any request for a time extension prior to expiration of the work authorization. If the change in scope affects the amount payable under the work authorization, the Engineer shall prepare a revised work authorization budget for the State's approval.

G. New Work Authorization. If the Engineer does not complete the services authorized in a work authorization before the specified completion date and has not requested a supplemental work authorization, the work authorization shall terminate on the completion date. At the sole discretion of the State, it may issue a new work authorization to the Engineer for the incomplete work using the unexpended balance of the preceding work authorization for the project. If approved by the State, the Engineer may calculate any additional cost for the incomplete work using the rates set forth in the preceding work authorization and in accordance with Attachment E, Fee Schedule.

H. Emergency Work Authorizations. The State, at its sole discretion, may accept the Engineer's signature on a faxed copy of the work authorization as satisfying the requirements for executing the work authorization, provided that the signed original is received by the State within five business days from the date on the faxed copy.

I. Deliverables. Upon satisfactory completion of the work authorization, the Engineer shall submit the deliverables as specified in the executed work authorization to the State for review and acceptance.

ARTICLE 2. PROGRESS

A. Progress meetings. The Engineer shall from time to time during the progress of the work confer with the State. The Engineer shall prepare and present such information as may be pertinent and necessary or as may be requested by the State in order to evaluate features of the work.

B. Conferences. At the request of the State or the Engineer, conferences shall be provided at the Engineer's office, the office of the State, or at other locations designated by the State. These conferences shall also include evaluation of the Engineer's services and work when requested by the State.

C. Inspections. If federal funds are used to reimburse costs incurred under this contract, the work and all reimbursements will be subject to periodic review by the U. S. Department of Transportation.

D. Reports. The Engineer shall promptly advise the State in writing of events that have a significant impact upon the progress of a work authorization, including:

1. problems, delays, adverse conditions that will materially affect the ability to meet the time schedules and goals, or preclude the attainment of project work units by established time periods; this disclosure will be accompanied by statement of the action taken or contemplated, and any State or federal assistance needed to resolve the situation; and
2. favorable developments or events which enable meeting the work schedule goals sooner than anticipated.

E. Corrective Action. Should the State determine that the progress of work does not satisfy the milestone schedule set forth in a work authorization, the State shall review the work schedule with the Engineer to determine the nature of corrective action needed.

ARTICLE 3. SUSPENSION OF WORK AUTHORIZATION

A. Notice. Should the State desire to suspend a work authorization but not terminate the contract, the State may verbally notify the Engineer followed by written confirmation, giving (30) thirty days notice. Both parties may waive the thirty-day notice in writing.

B. Reinstatement. A work authorization may be reinstated and resumed in full force and effect within sixty (60) business days of receipt of written notice from the State to resume the work. Both parties may waive the sixty-day notice in writing.

C. Contract Period Not Affected. If the State suspends a work authorization, the contract period as determined in Article 2 of the contract (Contract Period) is not affected and the contract and the work authorization will terminate on the date specified unless the contract or work authorization is amended to authorize additional time.

D. Limitation of Liability. The State shall have no liability for work performed or costs incurred prior to the date authorized by the State to begin work, during periods when work is suspended, or after the completion date of the contract or work authorization.

ARTICLE 4. ADDITIONAL WORK

A. Notice. If the Engineer is of the opinion that any assigned work is beyond the scope of this contract and constitutes additional work, it shall promptly notify the State in writing, presenting the facts of the work authorization and showing how the work authorization constitutes additional work.

B. Supplemental Agreement. If the State finds that the work does constitute additional work, the State shall so advise the Engineer and a written supplemental agreement will be executed as provided in General Provisions, Article 6, Supplemental Agreements.

C. Limitation of Liability. The State shall not be responsible for actions by the Engineer or any costs incurred by the Engineer relating to additional work not directly associated with or prior to the execution of a supplemental agreement.

ARTICLE 5. CHANGES IN WORK

A. Work Previously Submitted as Satisfactory. If the Engineer has submitted work in accordance with the terms of this contract but the State requests changes to the completed work or parts thereof which involve changes to the original scope of services or character of work under the contract, the Engineer shall make such revisions as requested and as directed by the State. This will be considered as additional work and paid for as specified under Article 4, Additional Work.

B. Work Does Not Comply with Contract. If the Engineer submits work that does not comply with the terms of this contract, the State shall instruct the Engineer to make such revision as is necessary to bring the work into compliance with the contract. No additional compensation shall be paid for this work.

C. Errors/Omissions. The Engineer shall make revisions to the work authorized in this contract which are necessary to correct errors or omissions appearing therein, when required to do so by the State. No additional compensation shall be paid for this work.

ARTICLE 6. SUPPLEMENTAL AGREEMENTS

A. Need. The terms of this contract may be modified if the State determines that there has been a significant increase or decrease in the duration, scope, cost, complexity or character of the services to be performed. A supplemental agreement will be executed to authorize such significant increases or decreases. Significant is defined to mean a cost increase of any amount and a cost decrease of twenty percent (20%) or more of the original estimated project cost.

B. Compensation. Additional compensation, if appropriate, shall be calculated as set forth in Article 3 of the contract (Compensation). Significant changes affecting the cost or maximum amount payable shall be defined to include but not be limited to new work not previously authorized or previously authorized services that will not be performed. The parties may reevaluate and renegotiate costs at this time.

C. When to Execute. Both parties must execute a supplemental agreement within the contract period specified in Article 2 of the contract (Contract Period).

ARTICLE 7. OWNERSHIP OF DATA

A. Work for Hire. All services provided under this contract are considered work for hire and as such all data, basic sketches, charts, calculations, plans, specifications, and other documents created or collected under the terms of this contract are the property of the State.

B. Disposition of Documents. All documents prepared by the Engineer and all documents furnished to the Engineer by the State shall be delivered to the State upon request by the State. The Engineer, at its own expense, may retain copies of such documents or any other data which it has furnished the State under this contract, but further use of the data is subject to permission by the State.

C. Release of Design Plan. The Engineer (1) will not release any roadway design plan created or collected under this contract except to its subproviders as necessary to complete the contract; (2) shall include a provision in all subcontracts which acknowledges the State's ownership of the design plan and prohibits its use for any use other than the project identified in this contract; and (3) is responsible for any improper use of the design plan by its employees, officers, or subproviders, including costs, damages, or other liability resulting from improper use. Neither the Engineer nor any subprovider may charge a fee for the portion of the design

plan created by the State.

ARTICLE 8. PUBLIC INFORMATION AND CONFIDENTIALITY

A. Public Information. The State will comply with Government Code, Chapter 552, the Public Information Act, and 43 Texas Administrative Code §3.10 et seq. in the release of information produced under this contract.

B. Confidentiality. The Engineer shall not disclose information obtained from the State under this contract without the express written consent of the State.

C. Access to Information. The Engineer is required to make any information created or exchanged with the state pursuant to this contract, and not otherwise excepted from disclosure under the Texas Public Information Act, available in a format that is accessible by the public at no additional charge to the state.

ARTICLE 9. PERSONNEL, EQUIPMENT AND MATERIAL

A. Engineer Resources. The Engineer shall furnish and maintain quarters for the performance of all services, in addition to providing adequate and sufficient personnel and equipment to perform the services required under the contract. The Engineer certifies that it presently has adequate qualified personnel in its employment for performance of the services required under this contract, or it will be able to obtain such personnel from sources other than the State.

B. Removal of Contractor Employee. All employees of the Engineer assigned to this contract shall have such knowledge and experience as will enable them to perform the duties assigned to them. The State may instruct the Engineer to remove any employee from association with work authorized in this contract if, in the sole opinion of the State, the work of that employee does not comply with the terms of this contract or if the conduct of that employee becomes detrimental to the work.

C. Replacement of Key Personnel. The Engineer must notify the State in writing as soon as possible, but no later than three business days after a project manager or other key personnel is removed from association with this contract, giving the reason for removal.

D. State Approval of Replacement Personnel. The Engineer may not replace the project manager or key personnel without prior consent of the State. The State must be satisfied that the new project manager or other key personnel is qualified to provide the authorized services. If the State determines that the new project manager or key personnel is not acceptable, the Engineer may not use that person in that capacity and shall replace him or her with one satisfactory to the State within forty-five (45) days.

E. Ownership of Acquired Property. Except to the extent that a specific provision of this contract states to the contrary, the State shall own all intellectual property acquired or developed under this contract and all equipment purchased by the Engineer or its subcontractors under this contract. All intellectual property and equipment owned by the State shall be delivered to the State when the contract terminates, or when it is no

longer needed for work performed under this contract, whichever occurs first.

ARTICLE 10. LICENSE FOR TxDOT LOGO USE

A. Grant of License; Limitations. The Engineer is granted a limited revocable non-exclusive license to use the registered TxDOT trademark logo (TxDOT Flying "T") on any deliverables prepared under this contract that are the property of the State. The Engineer may not make any use of the registered TxDOT trademark logo on any other materials or documents unless it first submits that request in writing to the State and receives approval for the proposed use. The Engineer agrees that it shall not alter, modify, dilute, or otherwise misuse the registered TxDOT trademark logo or bring it into disrepute.

B. Notice of Registration Required: The Engineer's use of the Flying 'T' under this article shall be followed by the capital letter R enclosed within a circle (®) that gives notice that the Flying 'T' is registered in the United States Patent and Trademark Office (USPTO).

C. No Assignment or Sublicense. The Engineer may not assign or sublicense the rights granted by this article without the prior written consent of the State.

D. Term of License. The license granted to the Engineer by this article shall terminate at the end of the term specified in Article 2 of this contract.

ARTICLE 11. SUBCONTRACTING

A. Prior Approval. The Engineer shall not assign, subcontract or transfer any portion of professional services related to the work under this contract without prior written approval from the State.

B. DBE/HUB Compliance. The Engineer's subcontracting program shall comply with the requirements of Attachment H of the contract (DBE/HUB Requirements).

C. Required Provisions. All subcontracts for professional services shall include the provisions included in Attachment A, General Provisions, and any provisions required by law. The Engineer is authorized to pay subproviders in accordance with the terms of the subcontract, and the basis of payment may differ from the basis of payment by the State to the Engineer.

D. Prior Review. Subcontracts for professional services in excess of $25,000 may be reviewed by the State prior to performance of work thereunder.

E. Engineer Responsibilities. No subcontract relieves the Engineer of any responsibilities under this contract.

ARTICLE 12. INSPECTION OF WORK

A. Review Rights. The State and the U. S. Department of Transportation, when federal funds are involved, and any of their authorized representatives shall have the right at all reasonable times to review or otherwise evaluate the work performed hereunder and the premises in which it is being performed.

B. Reasonable Access. If any review or evaluation is made on the premises of the Engineer or a subprovider, the Engineer shall provide and require its subproviders to provide all reasonable facilities and assistance for the safety and convenience of the state or federal representatives in the performance of their duties.

ARTICLE 13. SUBMISSION OF REPORTS

All applicable study reports shall be submitted in preliminary form for approval by the State before a final report is issued. The State's comments on the Engineer's preliminary report must be addressed in the final report.

ARTICLE 14. VIOLATION OF CONTRACT TERMS

A. Increased Costs. Violation of contract terms, breach of contract, or default by the Engineer shall be grounds for termination of the contract, and any increased or additional cost incurred by the State arising from the Engineer's default, breach of contract or violation of contract terms shall be paid by the Engineer.

B. Remedies. This agreement shall not be considered as specifying the exclusive remedy for any default, but all remedies existing at law and in equity may be availed of by either party and shall be cumulative.

ARTICLE 15. TERMINATION

A. Causes. The contract may be terminated before the stated completion date by any of the following conditions.

1. By mutual agreement and consent, in writing from both parties.
2. By the State by notice in writing to the Engineer as a consequence of failure by the Engineer to perform the services set forth herein in a satisfactory manner.
3. By either party, upon the failure of the other party to fulfill its obligations as set forth herein.
4. By the State for reasons of its own, not subject to the mutual consent of the Engineer, by giving thirty business days notice of termination in writing to the Engineer.
5. By the State, if the Engineer violates the provisions of Attachment A, General Provisions Article 21, Gratuities, or Attachment H, Disadvantaged Business Enterprise/Historically Underutilized Business Requirements.
6. By satisfactory completion of all services and obligations described herein.

B. Measurement. Should the State terminate this contract as herein provided, no fees other than fees due and payable at the time of termination shall thereafter be paid to the Engineer. In determining the value of the work performed by the Engineer prior to termination, the State shall be the sole judge. Compensation for work at termination will be based on a percentage of the work completed at that time. Should the State terminate

this contract under paragraph (4) or (5) above, the Engineer shall not incur costs during the thirty-day notice period in excess of the amount incurred during the preceding thirty days.

C. Value of Completed Work. If the Engineer defaults in the performance of this contract or if the State terminates this contract for fault on the part of the Engineer, the State will give consideration to the following when calculating the value of the completed work: (1) the actual costs incurred (not to exceed the rates set forth in Attachment E, Fee Schedule) by the Engineer in performing the work to the date of default; (2) the amount of work required which was satisfactorily completed to date of default; (3) the value of the work which is usable to the State; (4) the cost to the State of employing another firm to complete the required work; (5) the time required to employ another firm to complete the work; and (6) other factors which affect the value to the State of the work performed.

D. Calculation of Payments. The State shall use the fee schedule set forth in Attachment E to the contract (Fee Schedule) in determining the value of the work performed up to the time of termination. In the case of partially completed engineering services, eligible costs will be calculated as set forth in Attachment E, Fee Schedule. The sum of the provisional overhead percentage rate for payroll additives and for general and administrative overhead costs during the years in which work was performed shall be used to calculate partial payments. Any portion of the fixed fee not previously paid in the partial payments shall not be included in the final payment.

E. Excusable Delays. Except with respect to defaults of subproviders, the Engineer shall not be in default by reason of any failure in performance of this contract in accordance with its terms (including any failure to progress in the performance of the work) if such failure arises out of causes beyond the control and without the default or negligence of the Engineer. Such causes may include, but are not restricted to, acts of God or the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather.

F. Surviving Requirements. The termination of this contract and payment of an amount in settlement as prescribed above shall extinguish the rights, duties, and obligations of the State and the Engineer under this contract, except for those provisions that establish responsibilities that extend beyond the contract period.

G. Payment of Additional Costs. If termination of this contract is due to the failure of the Engineer to fulfill its contract obligations, the State may take over the project and prosecute the work to completion, and the Engineer shall be liable to the State for any additional cost to the State.

ARTICLE 16. COMPLIANCE WITH LAWS
The Engineer shall comply with all applicable federal, state and local laws, statutes, codes, ordinances, rules and regulations, and the orders and decrees of any court, or administrative bodies or tribunals in any manner affecting the performance of this contract, including, without limitation, worker's compensation laws, minimum and maximum salary and wage statutes and regulations, nondiscrimination, and licensing laws and regulations. When required, the Engineer shall furnish the State with satisfactory proof of its compliance therewith.

ARTICLE 17. INDEMNIFICATION
A. Errors, Omissions, Negligent Acts. The Engineer shall save harmless the State and its officers and employees from all claims and liability due to activities of itself, its agents, or employees, performed under this contract and which are caused by or result from error, omission, or negligent act of the Engineer or of any person employed by the Engineer.

B. Attorney Fees. The Engineer shall also save harmless the State from any and all expense, including, but not limited to, attorney fees which may be incurred by the State in litigation or otherwise resisting said claim or liabilities which may be imposed on the State as a result of such activities by the Engineer, its agents, or employees.

ARTICLE 18. ENGINEER'S RESPONSIBILITY
A. Accuracy. The Engineer shall be responsible for the accuracy of work and shall promptly make necessary revisions or corrections resulting from its errors, omissions, or negligent acts without compensation.

B. Errors and Omissions. The Engineer's Responsibility for all questions arising from design errors or omissions will be determined by the State. All decisions shall be in accordance with the State's "Consultant Errors & Omissions Correction and Collection Procedures" and Texas Government Code §2252.905. The Engineer will not be relieved of the responsibility for subsequent correction of any such errors or omissions or for clarification of any ambiguities until after the construction phase of the project has been completed.

C. Seal. The responsible Engineer shall sign, seal and date all appropriate engineering submissions to the State in accordance with the Texas Engineering Practice Act and the rules of the Texas Board of Professional Engineers.

D. Resealing of Documents. Once the work has been sealed and accepted by the State, the State, as the owner, will notify the party to this contract, in writing, of the possibility that a State engineer, as a second engineer, may find it necessary to alter, complete, correct, revise or add to the work. If necessary, the second engineer will affix his seal to any work altered, completed, corrected, revised or added. The second engineer will then become responsible for any alterations, additions or deletions to the original design including any effect or impacts of those changes on the original engineer's design.

ARTICLE 19. NONCOLLUSION
A. Warranty. The Engineer warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for the Engineer, to solicit or secure this contract and that it has not paid or agreed to pay any company or engineer any fee, commission, percentage, brokerage fee, gifts, or any other consideration, contingent upon or resulting from the award or making of this contract.

B. Liability. For breach or violation of this warranty, the State shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or compensation, or otherwise recover, the full amount of such fee, commission, percentage, brokerage fee, gift or contingent fee.

ARTICLE 20. INSURANCE
The Engineer certifies that it has insurance on file with Contract Services of the Texas Department of Transportation in the amount specified on Form 1560-CS, Certificate of Insurance, as required by the State. No other proof of insurance is acceptable to the State. The Engineer certifies that it will keep current insurance on file with that office for the duration of the contract period. If insurance lapses during the contract period, the Engineer must stop work until a new certificate of insurance is provided.

ARTICLE 21. GRATUITIES

A. Employees Not to Benefit. Texas Transportation Commission policy mandates that employees of the Texas Department of Transportation shall not accept any benefit, gift or favor from any person doing business with or who reasonably speaking may do business with the State under this contract. The only exceptions allowed are ordinary business lunches and items that have received the advance written approval of the Executive Director of the Texas Department of Transportation.

B. Liability. Any person doing business with or who reasonably speaking may do business with the State under this contract may not make any offer of benefits, gifts or favors to department employees, except as mentioned above. Failure on the part of the Engineer to adhere to this policy may result in the termination of this contract.

ARTICLE 22. DISADVANTAGED BUSINESS ENTERPRISE OR HISTORICALLY UNDERUTILIZED BUSINESS REQUIREMENTS

The Engineer agrees to comply with the requirements set forth in Attachment H, Disadvantaged Business Enterprise or Historically Underutilized Business Subcontracting Plan Requirements with an assigned goal or a zero goal, as determined by the State.

ARTICLE 23. MAINTENANCE, RETENTION AND AUDIT OF RECORDS

A. Retention Period. The Engineer shall maintain all books, documents, papers, accounting records and other evidence pertaining to costs incurred and services provided (hereinafter called the Records). The Engineer shall make the records available at its office during the contract period and for seven (7) years from the date of final payment under this contract, until completion of all audits, or until pending litigation has been completely and fully resolved, whichever occurs last.

B. Availability. The State or any of its duly authorized representatives, the Federal Highway Administration, the United States Department of Transportation, Office of Inspector General, and the Comptroller General shall have access to the Engineer's Records which are directly pertinent to this contract for the purpose of making audits, examinations, excerpts and transcriptions.

ARTICLE 24. NEPOTISM DISCLOSURE

A. In this section the term "relative" means:

(1) a person's great grandparent, grandparent, parent, aunt or uncle, sibling, niece or nephew, spouse, child, grandchild, or great grandchild, or

(2) the grandparent, parent, sibling, child, or grandchild of the person's spouse.

B. A notification required by this section shall be submitted in writing to the person designated to receive official notices under this contract and by first-class mail addressed to Contract Services Office, Texas Department of Transportation, 125 East 11th Street, Austin Texas 78701. The notice shall specify the Engineer's firm name, the name of the person who submitted the notification, the contract number, the district, division, or office of TxDOT that is principally responsible for the contract, the name of the relevant Engineer employee, the expected role of the Engineer employee on the project, the name of the TxDOT employee who is a relative of the Engineer employee, the title of the TxDOT employee, the work location of the TxDOT employee, and the nature of the relationship.

C. By executing this contract, the Engineer is certifying that the Engineer does not have any knowledge that any of its employees or of any employees of a subcontractor who are expected to work under this contract have a relative that is employed by TxDOT unless the Engineer has notified TxDOT of each instance as required by subsection (b).

D. If the Engineer learns at any time that any of its employees or that any of the employees of a subcontractor who are performing work under this contract have a relative who is employed by TxDOT, the Engineer shall notify TxDOT under subsection (b) of each instance within thirty days of obtaining that knowledge.

E. If the Engineer violates this section, TxDOT may terminate the contract immediately for cause, may impose any sanction permitted by law, and may pursue any other remedy permitted by law.

ARTICLE 25. CIVIL RIGHTS COMPLIANCE

A. Compliance with Regulations: The Engineer will comply with the Acts and the Regulations relative to Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, the Federal Highway Administration, as they may be amended from time to time.

B. Nondiscrimination: The Engineer, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, sex, or national origin in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The Engineer will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 45 CFR Part 21.

C. Solicitations for Subcontracts, Including Procurement of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the Engineer for work to be performed under a subcontract, including procurement of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Engineer of the Engineer's obligations under this contract and the Acts and Regulations relative to Nondiscrimination on the grounds of race, color, or national origin.

D. Information and Reports: The Engineer shall provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto, and will permit access to its books, records, accounts, other sources of information, and facilities as may be determined by the State or the Federal Highway Administration to be pertinent to ascertain compliance with such Acts, Regulations or directives. Where any information required of the Engineer is in the exclusive possession of another who fails or refuses to furnish this information, the Engineer will so certify to the State or the Federal Highway Administration, as appropriate, and shall set forth what efforts it has made to obtain the information.

E. Sanctions for Noncompliance: In the event of the Engineer's noncompliance with the Nondiscrimination provisions of this contract, the State will impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

a) withholding of payments to the Engineer under the contract until the Engineer complies and/or
b) cancellation, termination, or suspension of the contract, in whole or in part.

F. Incorporation of Provisions: The Engineer will include the provisions of paragraphs (A) through (E) in every subcontract, including procurement of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The Engineer will take such action with respect to any subcontract or procurement as the State or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance provided, however, that in the event an Engineer becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Engineer may request the Texas Department of Transportation to enter into such litigation to protect the interests of the State; and, in addition, the Engineer may request the United States to enter into such litigation to protect the interests of the United States.

ARTICLE 26. PATENT RIGHTS

The State and the U. S. Department of Transportation shall have the royalty free, nonexclusive and irrevocable right to use and to authorize others to use any patents developed by the Engineer under this contract.

ARTICLE 27. COMPUTER GRAPHICS FILES

The Engineer agrees to comply with Attachment G, Computer Graphics Files for Document and Information Exchange, if determined by the State to be applicable to this contract.

ARTICLE 28. CHILD SUPPORT CERTIFICATION

Under Section 231.006, Texas Family Code, the Engineer certifies that the individual or business entity named in this contract, bid, or application is not ineligible to receive the specified grant, loan, or payment and acknowledges that this contract may be terminated and payment may be withheld if this certification is inaccurate. If the above certification is shown to be false, the Engineer is liable to the state for attorney's fees, the cost necessary to complete the contract, including the cost of advertising and awarding a second contract,

and any other damages provided by law or the contract. A child support obligor or business entity ineligible to receive payments because of a payment delinquency of more than thirty (30) days remains ineligible until: all arrearages have been paid; the obligor is in compliance with a written repayment agreement or court order as to any existing delinquency; or the court of continuing jurisdiction over the child support order has granted the obligor an exemption from Subsection (a) of Section 231.006, Texas Family Code, as part of a court-supervised effort to improve earnings and child support payments.

ARTICLE 29. DISPUTES

A. Disputes Not Related to Contract Services. The Engineer shall be responsible for the settlement of all contractual and administrative issues arising out of any procurement made by the Engineer in support of the services authorized herein.

B. Disputes Concerning Work or Cost. Any dispute concerning the work hereunder or additional costs, or any non-procurement issues shall be settled in accordance with 43 Texas Administrative Code §9.2.

ARTICLE 30. SUCCESSORS AND ASSIGNS

The Engineer and the State do each hereby bind themselves, their successors, executors, administrators and assigns to each other party of this agreement and to the successors, executors, administrators and assigns of such other party in respect to all covenants of this contract. The Engineer shall not assign, subcontract or transfer its interest in this contract without the prior written consent of the State.

ARTICLE 31. SEVERABILITY

In the event any one or more of the provisions contained in this contract shall for any reason, be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision thereof and this contract shall be construed as if such invalid, illegal, or unenforceable provision had never been contained herein.

ARTICLE 32. PRIOR CONTRACTS SUPERSEDED

This contract constitutes the sole agreement of the parties hereto for the services authorized herein and supersedes any prior understandings or written or oral contracts between the parties respecting the subject matter defined herein.

ARTICLE 33. CONFLICT OF INTEREST

A. Representation by Engineer.

The Engineer represents that its firm has no conflict of interest that would in any way interfere with its or its employees' performance of services for the department or which in any way conflicts with the interests of the department. The Engineer further certifies that this agreement is not barred because of a conflict of interest pursuant to Texas Government Code, Section 2261.252, between it and the State. Specifically, the Engineer certifies that none of the following individuals, nor any or their family members within the second degree of affinity or consanguinity, owns 1% or more interest, or has a financial interest as defined under Texas Government Code, Section 2261.252(b), in the Engineer: any member of the Texas Transportation Commission, TxDOT's Executive Director, General Counsel, Chief of Procurement and Field Support Operations, Director of Procurement, or Director of Contract Services. The firm shall exercise reasonable care and diligence to prevent any actions or conditions that could result in a conflict with the department's interests.

B. Certification Status. The Engineer certifies that it is not:

1. a person required to register as a lobbyist under Chapter 305, Government Code;
2. a public relations firm; or
3. a government consultant.

C. Environmental Disclosure. If the Engineer will prepare an environmental impact statement or an environmental assessment under this contract, the Engineer certifies by executing this contract that it has no financial or other interest in the outcome of the project on which the environmental impact statement or environmental assessment is prepared.

D. Commencement of Final Design. This contract does not obligate the State to proceed with final design for any alternative. On completion of environmental documentation, the State will consider all reasonable alternatives in a fair and objective manner. Notwithstanding anything contained elsewhere in the contract or in any work authorization, the Engineer may not proceed with final design until after all relevant environmental decision documents have been issued.

E. Restrictions on Testing. If the Engineer will perform commercial laboratory testing under this contract, on any project the Engineer may not perform more than one of the following types of testing:

1. verification testing;
2. quality control testing; or
3. independent assurance testing.

ARTICLE 34. OFFICE OF MANAGEMENT AND BUDGET (OMB) AUDIT REQUIREMENTS

The parties shall comply with the requirements of the Single Audit Act of 1984, P.L. 98-502, ensuring that the single audit report includes the coverage stipulated in 2 CFR 200.

ARTICLE 35. DEBARMENT CERTIFICATIONS

The parties are prohibited from making any award at any tier to any party that is debarred or suspended or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549, "Debarment and Suspension." By executing this agreement, the Engineer certifies that it is not currently debarred, suspended, or otherwise excluded from or ineligible for participation in Federal Assistance Programs under Executive Order 12549. The parties to this contract shall require any party to a subcontract or purchase order awarded under this contract to certify its eligibility to receive Federal funds and, when requested by the State, to furnish a copy of the certification.

ARTICLE 36. E-VERIFY CERTIFICATION

Pursuant to Executive Order RP-80, Engineer certifies and ensures that for all contracts for services, Engineer shall, to the extent permitted by law, utilize the United States Department of Homeland Security's E-Verify system during the term of this agreement to determine the eligibility of:

1. All persons employed by Engineer during the term of this agreement to perform duties within the State of Texas; and
2. All persons, including subcontractors, assigned by Engineer to perform work pursuant to this agreement.

Violation of this provision constitutes a material breach of this agreement.

ARTICLE 37. RESTRICTIONS ON EMPLOYMENT OF FORMER STATE OFFICER OR EMPLOYEE

The Engineer shall not hire a former state officer or employee of a state agency who, during the period of state service or employment, participated on behalf of the state agency in this agreement's procurement or its negotiation until after the second anniversary of the date of the officer's or employee's service or employment with the state agency ceased.

ARTICLE 38. NON-DISCRIMINATION PROVISIONS

A. Relocation Assistance: The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects.

B. Disability:

a) Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. § 794 et. Seq.), as amended, prohibits discrimination on the basis of disability; and 49 CFR Part 27.
b) Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by the Department of Transportation regulations at 49 C.F.R. parts 37 and 38.

C. Age: The Age Discrimination Act of 1974, as amended, (42 U.S.C. § 6101 et. Seq.), prohibits discrimination on the basis of age.

D. Race, Creed, Color, National Origin, or Sex:

a) The Airport and Airway Improvement Act of 1982 (49 U.S.C. § 4.71, Section 4.7123), as amended, prohibits discrimination based on race, creed, color, national origin, or sex.
b) The Federal Aviation Administration's Nondiscrimination state (4 U.S.C. § 47123) prohibits discrimination on the basis of race, color, national origin, and sex.
c) Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et. seq.), prohibits discrimination on the basis of sex.
d) Title IX of the Education Amendments of 1972, as amended, prohibits discrimination because of sex in education program or activities (20 U.S.C. 1681 et. seq.).

E. Civil Rights Restoration Act: The Civil Rights Restoration Act of 1987 (PL 100-209), Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs and activities" to include all of the programs or activities of the Federal-aid recipients, subrecipients and contractors, whether such programs or activities are Federally funded or not.

F. Minority Populations: Executive Order 12808, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which limits discrimination against minority and low-income populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations.

G. Limited English Proficiency: Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, the Engineer must take reasonable steps to ensure that LEP persons have meaningful access to its programs (70 Fed. Reg. at 74087 to 74100).

ATTACHMENT B

SERVICES TO BE PROVIDED BY THE STATE

For each negotiated Work Authorization the State will designate a Project Manager to represent the State and will provide the following information or services as listed below by Function Code (FC).

FC 102 (110) – Feasibility Studies
Route and Design Studies

- Provide As-built Plans.
- Provide Preliminary Cost Estimate, Project Information and other Documentation.
- Provide available Environmental Assessment.
- Provide Map File, Topographic (Planimetric) Base File and Aerial Photography .
- Provide approved traffic data.
- Provide DCIS project information.
- Provide Value Engineering Report, if available and applicable.

FC 120 (120) – Social, Economic and Environmental Studies
Social, Economic and Environmental Studies and Public Involvement

- Provide available project development documents, environmental assessments or impacts, schematics, typical sections, public involvement records, etc.
- Review and process each necessary environmental and public involvement document prior to letting of the construction contract.
- Locate suitable facilities, advertise, and conduct each required public meeting.
- Provide designated State representatives for each public meeting.
- Provide a court reporter if necessary for public meetings.
- Review the information and material developed by the Engineer to be presented at each public meeting or public hearing three weeks before any such event. The State will return review comments to the Engineer two weeks before each such meetings or hearings, if applicable.

FC 130 (130) - Right-of-Way Data

- Provide available existing right of way plans for the proposed project location.
- Provide right of way maps for the proposed project.
- Conduct all right-of-way appraisals and acquisitions, if applicable.

FC 160 (150) – Roadway Design
Field Surveying and Photogrammetry

- Provide survey control points such as horizontal control points, benchmark elevations and descriptions for vertical control, and listing of horizontal alignment coordinates for baseline control only, if available.
- Provide aerial photographs (contact prints) of the proposed project area, if available.
- Furnish a Digital Terrain Model (DTM) file to generate Cross Sections and contours, if available.

FC 160 (160) – Roadway Design
Roadway Design Controls

- Provide applicable Preliminary Design Concept Conference, schematic layout and Plans, Specifications and Estimate (PS&E) package checklists for use by the Engineer.
- Provide As-built plans of the existing project facilities, if available.
- Provide standard GEOPAK design cross section criteria files developed by the State.

FC 160 (161) – Roadway Design
Drainage

- Provide existing hydraulic and hydrologic studies associated with the project and project area.
- Provide areas of wetlands delineation to be surveyed by the Engineer.

FC 160 (162) – Roadway Design
Signing, Pavement Markings and Signalization (Permanent)

- Available traffic counts, traffic projects and accident data, if available.

FC 160 (163) – Roadway Design
Miscellaneous (Roadway)

- Provide example estimates, district general notes and standards, sample specification lists and related hard copy documentation for the Engineer's use in preparing the preliminary estimate, general notes and specifications.
- Provide a maximum project cost to be used in the preparation of the preliminary design.
- Furnish tabulation of current applicable bid process, if applicable.
- Negotiate with each project utility company for relocation agreements or required relocation as applicable.

FC 145 (164) – Managing Contracted or Donated PS&E Services
Project Management and Administration

- Review, approve and update Project Design Criteria.
- Prompt Review of Deliverables.
- Provide copies of preferred District Details to be used.
- Provide copies of preferred District Standards to be used.
- Prepare final General Notes and final Specification Data Sheets.

FC 160(170) – Roadway Design
Bridge Design

- Furnish as-built plans of existing structures, National Bridge Inventory (NBI), and applicable Brinsap report.
- Review and provide written approval of each preliminary bridge layout before bridge design work begins.

FC 309 – Design Verification/ Changes/ Alteration
Construction Phase Services

- Shop drawings and related submittals received from the contractor or fabricators.
- Request for applicable change order plan modifications that are based on changed conditions or a request by the State to modify the design based on field conditions or applicable updates to the State's standards and criteria.

Additional Responsibilities

- Provide design criteria for roadway, structures, drainage, and hydraulics.
- Interface with local, regional, State and Federal agencies or other entities on behalf of Engineer.
- Coordinate and notify in writing with Emergency Medical Services (EMS), school system, United State (U.S.) Mail, etc. for any detour routes and roadway closures. Upon request by the State, the Engineer shall prepare the necessary exhibits.
- Provide the Engineer with reviews in accordance with Exhibit C, "Work Schedule" of the Work Authorization and decisions to enable the Engineer to maintain the project schedule as approved by the State.
- Provide paper prints or electronic copies of design files containing, for example, a sample title sheet, plan profile sheet, plan sheet, sheet quantities and storm water pollution prevention plan (SW3P) sheet, if available and applicable.
- Provide milestone guidelines as applicable to the district the work is being performed.
- Secure all required permits and agreements.

Legacy Contract No. 12-5SDP5124
Peoplesoft Contract No. 5003

ATTACHMENT C

SERVICES TO BE PROVIDED BY THE ENGINEER

The work to be performed by the Engineer shall consist of providing engineering services required for the preparation of plans, specifications and estimates (PS&E) and related documents, for SH 36 from Fort Bend County line in the north to about 0.355 miles north of SH 35 (13.504MI), in Brazoria County. These services may include preparing roadway and bridge design, hydrologic and hydraulic design, traffic signal design, survey, traffic control plans, if requested, provide design support and testify as the engineer of record at Right-of–Way hearings, and construction phase services necessary to support the design process for SH 36.

GENERAL REQUIREMENTS

1.1. Design Criteria

The Engineer shall prepare all work in accordance with the latest version of applicable State's procedures, specifications, manuals, guidelines, standard drawings, standard specifications or previously approved special provisions and special specifications to include: the *PS&E Preparation Manual*, *Roadway Design Manual*, *Hydraulic Design Manual*, the *Texas Manual on Uniform Traffic Control Devices* (TMUTCD), *Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, 2014*, and other State approved manuals. When design criteria are not identified in State manuals, the Engineer shall notify the State and refer to the American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Street,* (latest Edition). In addition, the Engineer shall follow the guidelines shown in *Developing PS&E for the Houston District* which the Engineer may download from the State's website. The Engineer shall prepare the Plan, Specification, and Estimate (PS&E) package in a form suitable for letting through the State's construction contract bidding and awarding process.

The Engineer shall identify, prepare exhibits and complete all necessary forms for each Design Exception and Waiver required within project limits prior to the 30% project completion submittal. The Engineer shall submit each exception and waiver to the State for coordination and processing of approvals. If subsequent changes require additional exceptions, the Engineer shall notify the State in writing as soon as possible after identification of each condition that may warrant a design exception or waiver.

1.2. Right-of-Entry and Coordination

The Engineer shall *notify* the State and secure permission to enter private property to perform any surveying, environmental, engineering or geotechnical activities needed off State right-of-way. In pursuance of the State's policy with the general public, the Engineer shall not commit acts which would result in damages to private property, and the Engineer shall make every effort to comply with the wishes and address the concerns of affected private property owners. The Engineer shall contact each property owner prior to any entry onto the owner's property, and shall request concurrence from the State prior to each entry.

The Engineer shall notify the State and coordinate with adjacent engineers on all controls at project interfaces. The Engineer shall document the coordination effort, and each engineer shall provide written concurrence regarding the agreed project controls and interfaces. In the event the Engineer and the other adjacent engineers are unable to agree, the Engineer and each adjacent engineer shall meet jointly with the State for resolution. The State will have authority over the Engineer's disagreements and the State's decision will be final.

The Engineer shall prepare each exhibit necessary for approval by each utility, and other governmental or regulatory agency in compliance with the applicable format and guidelines required by each entity and as approved by the State. The Engineer shall notify the State in writing prior to beginning any work on any outside agency's exhibit.

1.3. Progress Reporting and Invoicing

The Engineer shall invoice according to Function Code breakdowns shown in Attachment "C" of the Contract for Engineering Services and Exhibit "D" - *Fee Schedule*, of each Work Authorization. The Engineer shall submit each invoice in a format acceptable to the State.

With each invoice, the Engineer shall include a completed Projected vs. Actual Contract Invoices form. The Engineer shall submit a monthly written progress report to the State's Project Manager regardless of whether the Engineer is invoicing for that month. The Engineer's written progress report shall describe activities during the reporting period; activities planned for the following period; problems encountered and actions taken to remedy them; list of meetings attended; and overall status, including a percent complete by task.

The Engineer shall prepare both a design time schedule using the latest version of Primavera software, and an estimated construction time determination, using the latest version of Primavera software in accordance with the State's *Administrative Circular No. 17-93*. The schedules shall indicate tasks, subtasks, critical dates, milestones, deliverables and review requirements in a format that depicts the interdependence of the various items. The Engineer shall provide assistance to State personnel in interpreting the schedules. The Engineer shall schedule milestone submittals at 30%, 60%, 90% and final project completion phases. The Engineer shall advise the State in writing if the Engineer is not able to meet the scheduled milestone review date.

Once the project goes to letting, all electronic files shall be delivered within 30 days of written request in conformance with the latest version of the State's Document and Information Exchange (Attachment G).

Final payment for the PS&E package is contingent upon the State's receipt and confirmation by the State's Project Manager that the electronic files run and is formatted in accordance with Attachment G of the contract and all review comments are addressed, except for construction phase services and Right-of-Way hearings.

The Engineer shall prepare a letter of transmittal to accompany each document submittal to the State. At a minimum, the letter of transmittal shall include the State's Control-Section-Job (CSJ) number, the highway number, County, project limits, State's contract number, and State's work authorization number.

1.4. Traffic Control Plans

The Engineer shall provide all planning, labor, and equipment to develop and to execute each Traffic Control Plan (TCP) needed by the Engineer to perform any field services (geotechnical, surveying, etc) under each Work Authorization. The Engineer shall comply with the requirements of the most recent edition of the TMUTCD. The Engineer shall submit a copy of each TCP to the State for approval prior commencing any work on any State roadway. The Engineer shall provide all signs, flags, and safety equipment needed to execute the approved TCP. The Engineer shall notify the State in writing twenty-four (24) hours in advance of executing each TCP requiring a lane closure, and shall have received written concurrence from the State prior to beginning the lane closure. The Engineer's field crew shall possess a copy of the approved TCP on the job site at all times and shall make the TCP available to the State for inspection upon request. The Engineer shall assign charges for any required traffic control to the applicable function code.

1.5. Coordination

The Engineer shall coordinate issues and communications with State's internal resource areas through the State's Project Manager. The State will communicate the resolution of issues and provide the Engineer direction through the State's Project Manager.

1.6. Level of Effort

For each work authorization, the Engineer shall base the level of effort at each phase on the prior work developed in earlier phases without unnecessary repetition or re-study. As directed by the State, the Engineer shall provide written justification regarding whether or not additional or repeated level of effort of earlier completed work is warranted, or if additional detail will be better addressed at a later stage in the project development.

1.7. Quality Assurance and Quality Control

The Engineer shall provide peer review for 30%, 60%, 90%, 95% and final deliverable. For each deliverable, the Engineer shall have some evidence of their internal review and mark-up of that deliverable as preparation for submittal. A milestone submittal is not considered complete unless the required milestone documents and associated internal red-line mark-ups are submitted. The State's project manager may require the Engineer to submit the Engineer's internal mark-up (red-lines) or comments developed as part the Engineer's quality control step. When internal mark-ups are requested by the State in advance, the State, at its sole discretion, may reject the actual deliverable should the Engineer fail to provide the evidence of quality control. The Engineer shall clearly label each document submitted for quality assurance as an internal mark-up document.

The Engineer shall perform Quality Control/Quality Assurance on all survey procedures, field surveys, data, and products prior to delivery to the State. If, at any time, during the course of reviewing a survey submittal it becomes apparent to the State that the submittal contains errors, omissions, or inconsistencies, the State may cease its review and immediately return the submittal to the Engineer for appropriate action by the Engineer. A submittal returned to the Engineer for this reason is not a submittal for purposes of the submission schedule.

1.8. Use of the State's Standards

The Engineer shall identify and insert the applicable, current State's Standard Details, District Standard Details, or miscellaneous details that have been approved for use as frequently as is feasible. The Engineer shall sign, seal, and date each District Standard and miscellaneous detail selected for use is dependent upon the project's location, if the District Standard

selected has not been adopted for use in a District. The Engineer shall obtain approval for use of these details during the early stages of design from the State Project Manager or designated State Area Engineer. In addition, these details shall be accompanied by the appropriate general notes, special specifications, special provisions, and method of payment. The Engineer shall retain the responsibility for the appropriate selection of each Standard identified for use within their design.

1.9. Organization of Plan Sheets

The PS&E shall be complete and organized in accordance with Stand-Alone Manual Notice 00-1 entitled "Organization of Plan Sheets" and as identified by the latest edition of a District's "Guidelines for Milestone Submittals". The PS&E package shall be suitable for the bidding and awarding of a construction contract, and in accordance with the latest State's policies and procedures, and the District's PS&E Checklist.

1.10. Limited Access to State's DCIS

The Engineer shall receive limited access to the State's DCIS to update responsible engineer information, sign, seal and date, build specification list and develop Project estimate.

As shown on the table below, the Engineer shall access and update DCIS with the following function codes.

DCIS Update Screens	Required Criteria for Access	DCIS Function Code
S01-Responsible Engineer Update S03-Sealing, Signing & Dating P04-Project Estimate C03-Build Specifications	Consultant Registered Professional Engineer (PE)	CONENG
P04-Project Estimate C03-Build Specifications	Consultant does not have to be a PE	CONEST

When requested by the State, the Engineer shall sign the following TxDOT forms: 1828, Information Security Compliance Agreement; 1980, Request for External Access to the State's Information Systems; 2110, Information Resources Confidentiality Agreement, and DR-IRI Information Access Request Form. These access rights will be revoked after the project is let.

1.11. Organization of Design Project Folder and Files (Electronic Project Files).

The Engineer shall organize the electronic project files in accordance with the State's File Management System (FMS) format. With the approval of the State, the Engineer may maintain the project files in the State's ProjectWise container.

TASK DESCRIPTIONS AND FUNCTION CODES

The Engineer shall categorize each task performed to correspond with the Function Codes (FC) and Task Descriptions.

FUNCTION CODE 102(110) – FEASIBILITY STUDIES

ROUTE AND DESIGN STUDIES

110.1. Data Collection and Field Reconnaissance

The Engineer shall collect, review and evaluate data described below. The Engineer shall notify the State in writing whenever the Engineer finds disagreement with the information or documents:

1. Data, if available, from the State, including "as-built plans", existing schematics, right-of-way maps, Subsurface Utility Engineering (SUE) mapping, existing cross sections, existing planimetric mapping, environmental documents, existing channel and drainage easement data, existing traffic counts, accident data, Bridge Inspection records, Project Management Information system (PMIS) data, identified endangered species, identified hazardous material sites, current unit bid price information, current special provisions, special specifications, and standard drawings.
2. Documents for existing and proposed development along proposed route from local municipalities and local ordinances related to project development.
3. Utility plans and documents from appropriate municipalities and agencies.
4. Readily available flood plain information and studies from the Federal Emergency Management Agency (FEMA), the U. S. Army Corps of Engineers (USACE), local municipalities and other governmental agencies in addition to that provided by the State.
5. The Engineer shall conduct field reconnaissance and collect data including a photographic record (to be maintained in Engineer's office) of notable existing features.
6. The Engineer shall utilize the available boring logs and other Geotechnical Investigation data and reports prepared by the State.
   - Engineer shall review the Geotechnical Report provided by TxDOT
   - Upon review, preform evaluation and recommend the need for any additional geotechnical investigation if applicable pertaining to the design of structures and project requirements
   - Submit the evaluation in letter report.

110.2. Design Criteria

The Engineer shall develop the roadway design criteria based on the controlling factors specified by the State (*i.e.* 4R, 3R, 2R, or special facilities), by use of the funding categories, design speed, functional classification, roadway class and any other set criteria as set forth in *PS&E Preparation Manual*, *Roadway Design Manual*, *Bridge Design Manual*, *Hydraulic Design Manual*, and other deemed necessary State approved manuals. The Engineer shall obtain written concurrence from the State prior to proceeding with a design if any questions arise during the design process regarding the applicability of State's design criteria.

110.3. Preliminary Cost Estimates

The Engineer shall develop a preliminary cost estimate using the Average Low Bid Unit Price for 30%, 60%, 90% and final milestone submittals. The Engineer shall estimate the total project cost including preliminary engineering, final engineering, right-of-way (ROW) acquisition, construction, utility relocation, and construction Phase Services.

110.4. Design Concept Conference

In accordance with the State's Project Development Process Manual, the Engineer, in cooperation with the State, shall plan, attend and document a Design Concept Conference (DCC) to be held prior to the 30 percent milestone submittal. In preparation for the DCC, the Engineer shall complete a State's Design Summary Report to serve as a checklist for the minimum required design considerations. The conference will provide for a brainstorming session in which decision makers, stakeholders and technical personnel may discuss and agree on:

1. Roadway and drainage design parameters
2. Engineering and environmental constraints
3. Project development schedule
4. Other issues as identified by the State
5. Identify any Design Exceptions and waivers
6. Preliminary Construction Cost Estimate

FUNCTION CODE 120(120) – SOCIAL/ECON/ENVIRON STUDIES

SOCIAL, ECONOMIC AND ENVIRONMENTAL STUDIES AND PUBLIC INVOLVEMENT

120.1. Informal Meetings

The Engineer shall provide technical assistance, preparation of exhibits for, and minutes of informal meetings requested by the public to discuss the pending impacts to neighborhoods and businesses due to roadway shutdowns, detours and access restrictions or as deemed necessary.

Engineer shall attend three (3) meeting with stakeholders/TxDOT in preparation for the informal meeting. Engineer shall also attend the informal meeting along with TxDOT and public officials. Engineer shall assist the State with all needed exhibits associated with this informal meeting. It is assumed that four (4) exhibits will be required for this meeting.

120.2. Environmental Permits Issues and Commitments (EPIC) Sheets

The Engineer shall complete the latest version of the EPIC sheets per information provided by the State. These sheets shall be signed, sealed and dated by the Engineer as indicated in signature block. The final sheets shall be submitted for the State's signature.

120.3. Environmental Study Review

The State shall provide the final environmental study to the Engineer for review and implementation into the PS&E package. The Engineer shall consider the constructability issues as it relates to the environmental impacts.

120.4. Environmental Exhibits

The Engineer shall prepare the necessary exhibits for the environmental study to be performed by others. The Engineer shall coordinate with the State's Environmental Project Manager and the State's Environmental Engineer for the preparation of these exhibits.

FC 130 (130) Right-of-Way Data

All standards, procedures and equipment used by the Engineer's Surveyor shall be such that the results of the survey will be in accordance with Board Rule 663.15, as promulgated by the Texas Board of Professional Land Surveyors.

The Engineer shall locate the existing ROW within the project limits from the current project control monuments and prepare a layout map for the project.

130.1. Right-of-Way Map

The Engineer shall review and evaluate the proposed and/or existing right-of-way map provided by the State to verify that all construction staging and alignment considerations have been taken into account. The Engineer shall make every effort to prevent detours and utility relocations from extending beyond the proposed right-of-way lines. The Engineer shall notify the State in writing if it is necessary to obtain additional Rights of Way construction easements or rights-of-entry and shall provide justification for such action. The Engineer shall be responsible for identifying and delineating any temporary construction easements in areas outside the State's Right of Way. The State shall secure the necessary legal instruments.

130.2. Utility Locations and Layouts

The Engineer shall coordinate with the State's Utility Coordinator to determine the location of each existing and proposed utility and attend meetings with the various utility companies to discuss potential conflicts. The Engineer shall identify utility conflict list for 30%, 60%, 90% and Final submittal. The Engineer shall identify and coordinate with the State's Utility Coordinator for relocations required within each construction easement or right-of entry.

The Engineer shall prepare utlity layouts, adjustments and exhibits for approx 25 gas line crossings showing easements and depth. The Engineer shall identify any locations where additional Subsurface Utility Investigation is required.

130.3. Access Management

The Engineer shall coordinate and evaluate access management within the project limits in accordance with the latest State Access Management Manual or as directed by the State.

FUNCTION CODE 145(145, 164) – MANAGING CONTRACTED/DONATED PE

PROJECT MANAGEMENT AND ADMINISTRATION

The Engineer, in association with the State's Project Manager shall be responsible for directing and coordinating all activities associated with the project to comply with State policies and procedures, and to deliver that work on time.

Project Management and Coordination: The Engineer shall coordinate all subconsultant activity to include quality of and consistency of plans and administration of the invoices and monthly progress reports. The Engineer shall coordinate with necessary local entities.

The Engineer shall:

- Prepare monthly written progress reports for each project, assume 18 months.

- Develop and maintain a detailed project schedule to track project conformance to Exhibit C, Work Schedule, for each work authorization. The schedule submittals shall be hard copy and electronic format.
- Meet on a scheduled basis with the State to review project progress, assume 18 meetings including stakeholder coordination and project progress review meetings.
- Prepare, distribute, and file both written and electronic correspondence.
- Prepare and distribute meeting minutes, assume preparing 18 meeting minutes.
- Document phone calls and conference calls as required during the project to coordinate the work for various team members.

FC 160 (150) – Roadway Design
Field Surveying and Photogrammetry

The Engineer shall provide design surveys as described within each work authorization as defined below:

Design survey – The combined performance of research, field work, analysis, computation and documentation necessary to provide detailed topographic (3-dimensional) mapping of a project site. A design survey may include, but need not be limited to locating existing right-of-way, cross-sections and Digital Terrain Models (DTM), horizontal and vertical location of utilities and improvements, detailing of bridges and other structures, review of right-of-way maps, establishing control points, etc.

It shall be the responsibility of the Engineer to secure right of entry to private property for the purpose of performing any surveying and soil boring activities. It is the stated policy of the State to make every effort to maintain positive relations with the general public. In pursuance of that policy, the Engineer shall not commit acts which will result in damages to private property and the Engineer will make every effort to comply with the wishes and address the concerns of private property owners.

150.1. Field Surveying

The Engineer shall verify the benchmark coordinates and establish additional horizontal and vertical control for the project. The Engineer shall provide supplemental field surveying services necessary to verify the Digital Terrain Model (DTM), produce topographic maps, establish the project baseline on the ground, locate and tie existing utilities to the project baseline, to tie the soil boring locations, and update topography. Coordinate geometry shall be based on and tied into State plane surface coordinate system. The Engineer shall:

1. Establish Project Baseline: The project base line must be coincidental with, or parallel to, the stationed "Design Center Line." Base line control points shall be established using 15M(ASTM) (5/8 inch) iron rods, 36 inches long, at Point of Curvatures (P.C.' s), Point of Intersections (P.I.'s) and Point of Tangents (P.T.'s) of horizontal curves and at 1000 feet maximum intervals on tangents. Baseline control points shall be offset with set iron rods on both sides near the existing ROW lines at a measured distance. If available, coordinate to field tie to the Project baseline set by adjacent Engineers for consistency and accuracy.

2. Horizontal and Vertical Control Surveys (Project Control):

The maximum distance between control points shall not exceed 1500 feet. The coordinate location and elevation of control points or center panel points based on GPS surveys conducted by the Engineer's Surveyor shall meet standards of accuracy. Reference may be made to standards of accuracy for First Authorization surveys as described in the Federal Geodetic Control Committee publication entitled Geometric Geodetic Accuracy Standards and Specifications for Using GPS Relative Positioning Techniques.

DATUM. All coordinates shall be based on the North American datum (NAD) 83. All elevations shall be based on the North American vertical datum (NAVD) of 1988, or as approved by the State.

All traverses conducted by the Engineer's Surveyor shall be tied to the National Geodetic Survey system, either directly or indirectly as follows:

The Engineer's Surveyor shall make sufficient measurements to existing National Geodetic Survey monuments to assess the angular, horizontal and vertical closure of each traverse.

The Engineer's Surveyor shall make sufficient measurements to monuments established by the State to assess the angular, horizontal and vertical closure of each traverse. All monuments established by the State for purposes of aerial photography control are based on the National Geodetic Survey system.

HORIZONTAL GROUND CONTROL

The coordinate location of the control or traverse points shall be based on traverses conducted by the Engineer's Surveyor meeting standards of accuracy as set forth below.

Reference may be made to standards of accuracy for Second Order, Class II, horizontal control traverses as described in the latest edition Federal Geodetic Control Committee publication entitled Standards and Specifications for Geodetic Control Networks.

- Azimuth closure shall not exceed 4.5 seconds times the square root of the number of traverse segments.
- Position closure after azimuth adjustment shall not exceed 1 in 20,000.
- In cases where a traverse approaches but does not entirely meet these standards of accuracy and the Engineer's Surveyor has assured itself that gross errors, mistakes and blunders have been eliminated, the Engineer's Surveyor shall submit the traverse data to the State for further review. The State will make a determination as to the acceptability of the traverse as an exception to the standard and notify the Engineer's Surveyor accordingly.

VERTICAL GROUND CONTROL

Elevations established on the control and benchmarks shall be conducted by the Engineer's Surveyor meeting standards of accuracy as set forth below. Reference may be made to standards of accuracy for third order vertical control traverses as described in the latest edition of the Federal Geodetic Control Committee publication entitled Standards and Specifications for Geodetic Control Networks.

- Vertical closure shall not exceed 0.05 feet times the square root of the distance in miles.

- In case where a traverse approaches but does not entirely meet these standards of accuracy and the Engineer's Surveyor has assured itself that gross errors, mistakes and blunders have been eliminated, the Engineer's Surveyor shall submit the traverse data to the State for review. The State will make a determination as to the acceptability of the traverse as an exception to the standard, and the State will notify the Engineer's Surveyor accordingly.

- Document field work and submit field data to the State.

Additionally, the Engineer shall locate previously set control points and benchmarks established by State (State Datum); establish benchmark circuit (run levels) throughout the Project; establish additional benchmarks at intervals not to exceed 1,000 feet for the limits of the Project; tie benchmarks (station/offset) to Project baseline. Benchmarks shall be 20M (ASTM) (3/4-inch) diameter, 48 inches long, located near the existing ROW line at a measured distance. All benchmark circuits shall be tied to the State's elevation datum. Perform the benchmark circuits in accordance with good surveying practices. The Engineer's Surveyor shall verify the closure and submit adjustments to State for approval prior to beginning the field surveys.

Provide 8 ½" x 11" location sketches for all control points and benchmarks. These sketches shall be signed, sealed and dated by a Registered Professional Land Surveyor (RPLS).

3. Survey Control Index Sheets. The Engineer's Surveyor shall prepare a Survey Control Index Sheet and a Horizontal and Vertical Control Sheet, signed, sealed and dated by the professional engineer in direct responsible charge of the surveying and the responsible RPLS for insertion into the plan set. The Survey Control Index Sheet shows an overall view of the project control and the relationship or primary monumentation and control used in the preparation of the project; whereas, the Horizontal and Vertical Control sheet identifies the primary survey control and the survey control monumentation used in the preparation of the project. Both the Survey Control Index Sheet and the Horizontal and Vertical Control Sheet should be used in conjunction with each other.

   The following information should be shown on the Survey Control Index Sheet:
   - Overall view of the project and primary control monuments set for control of the project.
   - Identification of the control points.
   - Baseline and centerline.
   - Graphic (Bar) Scale.
   - North Arrow.
   - Placement of note "The survey control information has been accepted and incorporated into this PS&E" which is signed, sealed, and dated by a Texas Professional Engineer.
   - RPLS signature, seal and date.
   - TxDOT title block containing District Name, County, Highway, and CSJ.

   The following information should be shown on the Horizontal and Vertical Control Sheet:

- Location for each control point, showing baseline and centerline alignment and North arrow.
- Station and offset (with respect to the baseline or centerline alignments) of each identified control point.
- Basis of Datum for horizontal control (base control monument, benchmark name, number, datum).
- Basis of Datum for the vertical control (base control monument, benchmark name, number, datum).
- Date of current adjustment of the datum.
- Monumentation set for Control (Description, District name/number and Location ties).
- Surface Adjustment Factor and unit of measurement.
- Coordinates (State Plane Coordinate (SPC) Zone and surface or grid).
- Relevant metadata.
- Graphic (Bar) Scale.
- Placement of note "The survey control information has been accepted and incorporated into this PS&E" which is signed, sealed and dated by a Texas Professional Engineer.
    - RPLS signature, seal and date.
- TxDOT title block containing District Name, County, Highway No., and CSJ.

4. Perform datum ties as required. If required, establish an elevation base on the project control's datum to other public entities published benchmarks.

5. Establish additional and verify existing control points. Horizontal and Vertical control ties should be made and tabulated, to other control points in the vicinity, which were established by other sources such as, the National Geodetic Survey (NGS), and the Federal Emergency Management Agency (FEMA), and as directed by the State.

6. Verify Digital Terrain Model (DTM) (cross sections at panel points) and planimetric mapping (DGN) provided by the State. Obtain additional existing ground cross sections as necessary to supplement the DTM files. Obtain cross sections at the center panel points to verify the DTM.

7. Obtain profile and cross section intersecting streets and driveways (to 50 feet outside ROW for driveways, and 200 feet for intersecting streets and 500 feet for intersecting streets greater than two lanes wide) for tie into project.

8. Obtain cross section drainage channels for a distance of 200 feet each way outside the ROW lines. Cross sections shall not exceed 100 feet intervals and shall be taken at right angles to the channels. The width of the cross sections shall cover the top of the channel over bank extending at least 50 feet beyond. Cross section data shall include flow line of the channel.

9. Secure right-of-entry (short of litigation), as needed for the project and the Engineer shall not commit acts which will result in damages to private property and the Engineer will make every effort to comply with the wishes and address the concerns of private property owners.

10. Locate existing underground and overhead utilities (location, elevation, size and direction).

11. Locate existing ROW.

12. ROW staking for additional field topography related to design work.

13. Review ROW maps.

14. Determine any changes in topography from outdated maps due to development, erosion, etc.

15. Determine type of existing material, existing pavements, etc.

16. Obtain profiles of existing drainage facilities.

17. Provide details of existing bridge structures. Obtain measurement of hydraulic opening under existing bridges.

18. Obtain top of manhole and flowline elevations, type and size, etc. of manholes, inlets, and valves of utilities.

19. Provide temporary signs, traffic control, flags, safety equipment, etc. and obtain necessary permits.

20. Obtain ties to existing bridges or culverts that may conflict with new construction.

21. Obtain line (PGL) and the edges of slab at bent location.

22. The Engineer's Surveyor using wetlands delineation information provided by the State shall stake and fence the areas containing wetlands. The Engineer's Surveyor is to provide information back to the Engineer in an electronic file to be incorporated onto the Plan and Profile (P&P) sheets. This staking and fencing at the wetland areas shall be handled under separate agreement.

23. The Engineer's Surveyor shall control traffic in and near surveying operations adequately to comply with the latest edition of the TMUTCD. In the event field personnel must divert traffic or close traveled lanes, a Traffic Control Plan shall be prepared by the Engineer's Surveyor and approved by the State prior to commencement of field work. A copy of the approved plans shall be in the possession of field personnel on the job site at all times and shall be made available to State personnel upon request.

24. If at any time during the contract period, the Engineer's Surveyor encounters unforeseen circumstances which may materially affect the scope, complexity or character of the work authorized by the State, the Engineer's Surveyor shall notify the State in writing immediately with a complete description of the circumstances encountered.

25. The following definitions shall apply:

    - DGN-Two dimensional digital map containing natural ground features and improvements plotted in a horizontal plane along the X and Y axes. A planimetric map does not include relief elements such as spot elevations, cross-sections, or contours.

- DTM-Three dimensional digital model of the ground containing those features necessary to define surface relief. A three dimensional model does not normally contain those planimetric features not necessary to define relief.
- Horizontal and vertical ground control-Survey control points for which the X and Y coordinate and elevation have been determined by on the ground surveys.

150.4. Survey Technical Requirements

The Engineer shall perform each design and construction survey in compliance with the following technical requirements:

1. Each design survey shall be performed under the direct supervision of a registered professional land surveyor currently registered with the Texas Board of Professional Land Surveying.

2. Horizontal and Vertical ground control used for design surveys and construction surveys , furnished to the Surveyor by the State or based on acceptable methods conducted by the Surveyor, shall meet the standards of accuracy required by the State.

   Reference may be made to standards of accuracy for horizontal control traverses, as described in the FGCS Standards and Specifications for Geodetic Control Networks, latest edition, the TxDOT Survey Manual, latest edition, or the TSPS Manual of Practice for Land Surveying in the State of Texas, as may be applicable.

3. Side shots or short traverse procedures used to determine horizontal and vertical locations shall meet the following criteria:

   - Side shots or short traverses shall begin and end on horizontal and vertical ground control as described as described above.

   - The Engineer shall use standards, procedures and equipment (may be GPS Equipment, LiDAR, Total Stations, etc.) such that horizontal locations relative to the control may be reported within the following limits:

     - Bridges and other roadway structures: less than 0.1 of one foot.
     - Utilities and improvements: less than 0.2 of one foot
     - Cross-sections and profiles: less than 1 foot.
     - Bore holes: less than 3 feet.

   - The Engineer shall use standards, procedures and equipment (may be GPS Equipment, LiDAR, Total Stations, etc.) such that vertical locations relative to the control may be reported within the following limits:

     - Bridges and other roadway structures: less than 0.02 of one foot.
     - Utilities and improvements: less than 0.03 of one foot.
     - Cross-sections and profiles: less than 0.1 of one foot.
     - Bore holes: less than 0.5 of one foot.

FC 160 (160) – Roadway Design
Roadway Design Controls

The Engineer shall inform the State of changes made from previous initial meetings regarding each exception, waiver, and variance that may affect the design. The Engineer shall cease all work under this task until the exceptions, waivers, and variances have been resolved between the Engineer and the State unless otherwise directed by the State to proceed. The Engineer shall identify, prepare exhibits and complete all necessary forms for Design Exceptions and Waivers within project limits prior to the 30% Submittal. These exceptions shall be provided to the State for coordination and processing of approvals.

160.1. Geometric Design.

The Engineer shall review the schematic provided by the State to confirm understanding of the project and to verify completeness and accuracy of the information. The Engineer shall refine the horizontal and vertical alignment of the design schematic in English units for main lanes, and cross streets. Minor modifications in the alignment will be considered to provide optimal design. Modifications must be coordinated with the State and adjacent Engineers. The State must approve the refined schematic prior to the Engineer proceeding to the 30% milestone submittal, and prior to starting on the bridge layouts.

160.2. Pedestrian and Bicycle Facilities

The Engineer shall coordinate with the State to incorporate any pedestrian and bicycle facilities as required or shown on the project's schematic. All pedestrian/bicycle facilities must be designed in accordance with the latest Americans with Disabilities Act Accessibility Guidelines (ADAAG), the Texas Accessibility Standards (TAS), and the AASHTO Guide for the Development of Bicycle Facilities.

160.3. Typical Sections:

Typical sections shall be required for all proposed and existing roadways and structures. Typical sections shall include width of travel lanes, shoulders, outer separations, border widths, curb offsets, and ROW. The typical section shall also include Profile Grade Line (PGL), centerline, pavement design, side slopes, sodding/seeding limits, concrete traffic barriers and sidewalks, if required, station limits, common proposed and existing structures including retaining walls, existing pavement removal, riprap, limits of embankment and excavation, etc. The typical sections shall also reference Pay Schedule for Item of work "Ride Quality of Pavement Surface".

160.4. Roadway Design.

The Engineer shall provide roadway plan and profile drawings using CADD standards as required by the State. The drawings shall consist of a planimetric file of existing features and files of the proposed improvements. The roadway base map shall contain line work that depicts existing surface features obtained from the schematic drawing. Existing major subsurface and surface utilities shall be shown. Existing and proposed right-of-way lines shall be shown. Plan and Profile to be shown on same sheets for main lanes, and cross streets.

The plan view shall contain the following design elements:

1. Calculated roadway centerlines for mainlanes, and cross streets. Horizontal control points shall be shown. The alignments shall be calculated using GEOPAK.
2. Pavement edges for all improvements (mainlanes, cross streets, and driveways).
3. Lane and pavement width dimensions.
4. Proposed structure locations, lengths and widths.
5. Direction of traffic flow on all roadways. Lane lines and arrows indicating the number of lanes shall also be shown.
6. Drawing scale shall be 1"=100'
7. ROW lines and easements.
8. Begin/end superelevation transitions and cross slope changes.
9. Limits of rip rap, block sod, and seeding.
10. Existing utilities and structures.
11. Benchmark information.
12. Radii call outs, curb location, Concrete Traffic Barrier (CTB), guard fence, crash safety items and American with Disabilities Act Accessibility Guidelines (ADAAG) compliance items.

The profile view shall contain the following design elements:

1. Calculated profile grade for proposed mainlanes (cite direction), and cross streets. Vertical curve data, including "K" values shall be shown.
2. Existing and proposed profiles along the proposed grade line of the mainlanes,
3. Water surface elevations at major stream crossing for 2, 5, 10, 25, 50, and 100 year storms.
4. Drawing vertical scale to be 1"=10'.

160.5. Mainlane Road Design:
The Engineer shall provide the design of mainlanes with full shoulders. The design shall be consistent with the approved schematic or refined schematic and the current Roadway Design Manual.

160.6. Cross Streets:
The Engineer shall provide an intersection layout detailing the drainage design at the intersection of each cross street. The layout shall include the curb returns, geometrics, transition length, stationing, pavement and drainage details. The Engineer shall design for full pavement width to the ROW and provide a transition to the existing roadway.

160.7. Driveways:
The Engineer shall review all driveways along the project and provide driveway summary sheets. Based on initial review we found approximately 70 driveways along the project. Scope does not include preparing and submitting a separate driveway profiles sheet.

160.8. Cut and Fill Quantities:
The Engineer shall develop an earthwork analysis to determine cut and fill quantities and provide final design cross sections at 100 feet intervals. Cross sections shall be delivered in standard GEOPAK format on 11"x17" sheets or roll plots and electronic files. The Engineer shall provide all criteria and input files used to generate the design cross sections. Cross sections and quantities shall consider existing pavement removals. Annotation shall include at a minimum existing/proposed right of way, side slopes (front & back), profiles, etc.

Two sets of drawings shall be submitted by the Engineer at the 30%, 60%, and 90%, and final submittals, respectively.

160.9. Plan Preparation:

The Engineer shall prepare roadway plans, profiles and typical sections for the proposed improvements. Prior to the 30% submittal the Engineer shall schedule a workshop to review profiles and cross-sections with the State. The profile and cross sections shall depict the 2, 5, 10, 25, 50, 100 and 500 year (if available) water surface elevations. The drawings will provide an overall view of the roadway and existing ground elevations with respect to the various storm design frequencies for the length of the project. This will enable the State to determine the most feasible proposed roadway profile. The State will approve the proposed profiles and cross sections before the Engineer continues with the subsequent submittals. This scope of services and the corresponding cost proposal are based on the Engineer preparing plans to construct main lanes, and cross streets at intersections. The roadway plans shall consist of the types and be organized in the sequence as described in "Stand Alone Manual Notice Number 00-1".

160.10. Wetlands Information:

From the information provided by the State, the wetland areas are to be staked, fenced and the delineation surveyed by the Engineer. The survey data shall be electronically transferred to the P&P sheets and the volumes calculated for the delineated areas. The surveying delineation work and electronic transfer of information will be performed under a separate agreement.

160.11. Pavement Design:

The Engineer shall incorporate the pavement design developed by the State for this project. The Engineer shall implement mainlane pavement design of Continuously Reinforced Concrete Pavement (CRCP), Asphalt Stabilized Base (ASB), Portland Cement Treated Base (PCTB), and Lime Treated Subgrade (LTS) as specified in the pavement design report provided by the State.

160.12. Pedestrian and Bicycle Facilities

The Engineer shall coordinate with the State to incorporate any pedestrian and bicycle facilities as required or shown on the project's schematic. All pedestrian/bicycle facilities must be designed in accordance with the latest Americans with Disabilities Act Accessibility Guidelines (ADAAG), the Texas Accessibility Standards (TAS), and the AASHTO Guide for the Development of Bicycle Facilities

FC 160 (161) – Roadway Design
Drainage

161.1. Drainage Report

1. Overview - The Engineer shall prepare a single comprehensive drainage study and report of the project area. The analysis and report shall cover the hydrologic and hydraulic analysis for approximately 13 miles of roadway improvement, including 14 cross drainage structures, including 1 bridge at Varner Creek. Varner Creek is the only studied crossing within the scope of work. Drainage will be provided primarily through median and roadside ditches. However, storm sewer may be utilized in developed areas, if feasible.

2. Hydrologic Studies - The Engineer shall conduct hydrologic analysis for approximately 13 miles of roadway and the contributing drainage area to the roadway and cross drainage structures. This analysis shall incorporate a thorough evaluation of the methodology available, comparison of the results of two or more methods, and calibration of results against measured data, if available. The analysis shall consider the pre-construction (existing) and post-construction (proposed) conditions. Specific scope of work includes the following:

   A. Delineate existing conditions drainage area boundaries for the approximately 13 miles of roadway ROW and contributing drainage areas to the existing 14 cross drainage structures. This includes delineation of drainage areas to each crossing/outfall as well as further delineation of sub-drainage areas specific to each existing and proposed ditch / storm sewer. Existing hydrologic studies will not be used without Engineer's assessment of validity.
   B. Determine existing conditions hydrologic parameters such as impervious covered areas, overland flow paths and slopes from appropriate sources including but not limited to topographic maps, GIS modeling, and construction plans and existing hydrologic studies. This will be performed the proposed approximately 13 miles of roadway ROW and contributing drainage area to the 14 cross drainage structures. This includes the larger drainage areas to each crossing/outfall as well as sub-drainage areas specific to each existing and proposed ditch / storm sewer. Existing hydrologic studies will not be used without Engineer's assessment of validity.
   C. Calculate existing conditions discharges using appropriate hydrologic methods. Include at a minimum, the "design" frequency to be specified by the State and the 1% AEP storm frequency. It may be required to include the full range of frequencies (50%, 20%, 10%, 4%, 2%, 1%, and 0.2% AEP). This includes development of both peak flows and full hydrographs.
   D. Compare calculated discharges to the effective FEMA flows, for studied crossings, if FEMA flows exist. If calculated discharges are to be used in the model instead of the effective FEMA flows, full justification should be documented.
   E. Delineate proposed conditions drainage area boundaries for the proposed approximately 13 miles of roadway ROW and contributing drainage areas to the proposed 14 cross drainage structures. This includes delineation of drainage areas to each crossing/outfall as well as further delineation of sub-drainage areas specific to each existing and proposed ditch / storm sewer.
   F. Determine proposed conditions hydrologic parameters such as impervious covered areas, overland flow paths and slopes from appropriate sources including but not limited to topographic maps, GIS modeling, and construction plans and existing hydrologic studies. This will be performed the proposed approximately 13 miles of roadway ROW and contributing drainage area to the 14 cross drainage structures. This includes the larger drainage areas to each crossing/outfall as well as sub-drainage areas specific to each existing and proposed ditch / storm sewer. Parameters will be determined for proposed conditions and a design scenario including a 150 foot development strip.
   G. Calculate proposed conditions discharges using appropriate hydrologic methods. Include at a minimum, the "design" frequency to be specified by the State and the 1% AEP storm frequency. It may be required to include the full range of frequencies (50%, 20%, 10%, 4%, 2%, 1%, and 0.2% AEP). This includes development of both peak flows and full hydrographs.

3. Hydraulic Studies: Cross Structures – The Engineer shall analyze 15 cross drainage structures (14 culverts, 1 bridge). To accommodate the proposed roadway improvements, it is assumed that existing crossings will be lengthened at a minimum, but may also need to be expanded/reconstructed to increase capacity. This scope of work does not include the detailed design of outfall improvements outside of the right of way, except for ditch outfall transitions of cross drainage culvert structures to the existing ditch. Hydraulic analysis will be performed for the following structures:

Crossing Number	Schematic Approximate Station	Listed Size	Notes
1	20+00	3-3X3	Downstream Channel. ROW ditches feed upstream end of culvert.
2	60+00	3-5x4	Upstream and Downstream Channel
3	106+00	3-4x3	Upstream and Downstream Channel
4	170+20	3-3x3	Upstream and Downstream Channel
5	218+30	2-4x3	Downstream Channel. ROW ditches feed upstream end of culvert.
6	282+10	2-3x3	Downstream Channel. ROW ditches feed upstream end of culvert.
7	310+50	2-3x3	Downstream Channel. ROW ditches feed upstream end of culvert.
8	366+10	1-4x2	Internal Culvert. ROW ditches feed upstream end of culvert and convey downstream end of culvert.
9	404+20	6-3x3	Upstream and Downstream Channel Assumed Bridge Class Culvert
10	480+00	BRIDGE	Upstream and Downstream Channel Varner Creek
11	500+45	2-6x6	Upstream and Downstream Channel
12	523+50	2-3x3	Downstream Channel. ROW ditches feed upstream end of culvert.

13	570+30	3-3x3	Downstream Channel. ROW ditches feed upstream end of culvert.
13A	15+50	1-5x3	Just upstream of Culvert 13, crossing County Road 4.
14	630+05	1-3x3	Downstream Channel. ROW ditches feed upstream end of culvert.

The Engineer shall provide the scope of work for the 14 cross culverts listed below:

A. Determine existing and proposed conditions peak flows at each crossing, based on the hydrologic analysis performed as part of Task 2.
B. Develop a hydraulic model for each crossing, in HEC-RAS, and determine a reasonable downstream downstream tailwater condition based on information available. If available, the current effective FEMA models, will be used as a base model for the analysis. If a "best available data" model is provided by the local floodplain administrator, it shall be utilized accordingly for this analysis. The provided base model shall be reviewed for correctness and updated as needed. If the provided effective model is not in HEC-RAS format, it shall be converted to HEC-RAS for this analysis. If the FEMA effective model or other "best available" model is not available, the Engineer shall develop the model based on survey information.
C. Determine the existing conditions 2, 5, 10, 25, 50, 100 and 500 year (if available), water surface elevations at each crossing. This data shall be provided in an interim letter report to the State to support development of design roadway profiles.
D. Analyze each crossing to determine recommended proposed size/configuration for each drainage crossing. The improvements may include extending, adjusting, or replacing culvert crossings. Analysis recommendations should accommodate the proposed roadway design and minimize the interference with the passage of traffic or incur damage to the highway and local property in accordance with the State's Hydraulic Design Manual, District Criteria and any specific guidance provided by the State.
E. Quantify impacts, beneficial or adverse, in terms of increases in peak flow rates and water surface elevations for the above listed hydraulic conditions and hydrologic events. Impacts will be determined both upstream and downstream of the culvert crossings for events up to an including the 1% AEP storm. If necessary, mitigation measures shall be presented, along with the advantages and disadvantages of each. Each method must consider the effects on the entire area.

The Engineer shall provide the scope of work for the one bridge crossing (Varner Creek" listed below:

F. Determine existing and proposed conditions peak flows at the crossing, based on the hydrologic analysis performed as part of Task 2.
G. Develop a hydraulic model for the crossing, in HEC-RAS, and determine a reasonable downstream downstream tailwater condition based on information available. If available, the current effective FEMA models, will be used as a base model for the analysis. If a "best available data" model is provided by the local floodplain administrator, it shall be utilized accordingly for this analysis. The provided base model shall be reviewed for correctness and updated as needed. If the provided effective

model is not in HEC-RAS format, it shall be converted to HEC-RAS for this analysis. If the FEMA effective model or other "best available" model is not available, the Engineer shall develop the model based on survey information.

H. Determine the existing conditions 2, 5, 10, 25, 50, 100 and 500 year (if available), water surface elevations at the crossing. This data shall be provided in an interim letter report to the State to support development of design roadway profiles.

I. Analyze the crossing to determine the recommended proposed size and configuration. The improvements may include widening or full reconstruction of the bridge crossings. Analysis recommendations should accommodate the proposed roadway design and minimize the interference with the passage of traffic or incur damage to the highway and local property in accordance with the State's Hydraulic Design Manual, District Criteria and any specific guidance provided by the State.

J. Quantify impacts, beneficial or adverse, in terms of increases in peak flow rates and water surface elevations for the above listed hydraulic conditions and hydrologic events. Impacts will be determined both upstream and downstream of the bridge crossing for events up to an including the 1% AEP storm. If necessary, mitigation measures shall be presented, along with the advantages and disadvantages of each. Each method must consider the effects on the entire area.

K. Computer right-of-way corridor 1% AEP floodplain volumes for existing and proposed roadway elevations. Offsite mitigation may be required to offset a decrease in 1% AEP floodplain volumes.

4. Hydraulic Studies: Ditches / Storm Drains – The Engineer shall analyze ditches / storm drains for approximately 13 miles of roadway, with approximately 14 outfalls, using software approved by the State. The majority of the roadway is anticipated be drained by roadside and median diches. However, storm sewer may be utilized in developed areas, if feasible. Hydraulic analysis of the existing and proposed ditch / storm sewer system, including any necessary in-line or off-line detention, will be performed using XP SWMM. Specific scope of work includes the following:

A. Determine existing and proposed peak flows and hydrographs for each ditch / sewer section, based on the hydrologic analysis performed as part of Task 2.

B. Develop existing conditions XP-SWMM model for each of the approximately 14 outfall systems. The XP-SWMM model shall include median / roadside ditches and culverts connecting ditches and shall terminate at the cross drainage structure, which will be modeled using HEC-RAS.

C. Determine existing conditions tailwater elevation at each outfall based on the HEC-RAS models developed for each cross drainage structure. The design water surface elevation at each cross drainage structure will be the starting basis for the analysis of the existing ditch system.

D. Assess existing drainage system in XP-SWMM to determine existing conditions discharges to cross drainage structures and the existing hydraulic grade line through the drainage system.

E. Develop proposed conditions XP-SWMM model for each of the approximately 14 outfall systems. The XP-SWMM model shall include median / roadside ditches, culverts connecting ditches, trunk-line storm sewer components, and shall terminate at the cross drainage structure, which will be modeled using HEC-RAS.

F. Determine proposed conditions tailwater elevation at each outfall based on the HEC-RAS models developed for each cross drainage structure. The design water surface

elevation at each cross drainage structure will be the starting basis for the analysis of the proposed ditch / storm sewer system.

G. Assess proposed drainage system in XP-SWMM to determine proposed conditions discharges to cross drainage structures and the proposed hydraulic grade line through the drainage system. Proposed drainage improvements shall minimize the interference with the passage of traffic or incur damage to the highway and local property in accordance with the State's Hydraulic Design Manual, District Criteria and any specific guidance provided by the state.

H. Optimize proposed drainage system in XP-SWMM to meet design criteria and to limit discharge into outfalls to the capacity of the system, which will be determined by the Engineer. Typically this will involve not increasing proposed discharges above existing discharges. Optimization will include, when possible, the use of in-line detention within the ditch / storm sewer system, with discharges controlled by restrictors or similar structures at interim culverts and outfalls. The Engineer shall also evaluate alternative flow routes, if necessary, to relieve system overload. Should in-line detention not be feasible, off-site detention in the vicinity of the proposed outfall may also be considered and assessed in the XP-SWMM model. Detention requirements shall be coordinated with the State. However, it is assumed that hydrograph routing within XP-SWMM will be performed to assess no adverse impact in both the 10% and 1% events.

I. Conduct a 1% AEP sheet flow analysis using the XP-SWMM model for both existing and proposed conditions.

5. Drainage Report – The Engineer shall provide the following services:

A. The Engineer shall prepare a brief letter report summarizing data collection efforts and preliminary findings. This report shall be prepared when the hydrologic and hydraulic analysis is approximately 30% complete. This report shall include the results of the existing condition hydraulic analysis of cross drainage structures. Profiles generated by this effort shall be utilized in the development of design roadway profiles. These profiles must be submitted to and approved by the State before continuing with the preparation of the comprehensive drainage report.

B. The Engineer shall prepare a single comprehensive drainage study and report of the project area, signed, sealed, and dated by a registered or licensed engineer. This shall include a draft report and a final report which addresses comments provided by the State. The drainage report shall include, at a minimum, the following sections:
   i. Introduction: location, study objectives, general creek and watershed information, and other pertinent facts
   ii. Hydrology: watershed description, soil and land use information, south of hyrologic data and methodology or models used to develop flow data, pertinent input data and parameters of hydrologic analysies, summary table of results for a full range of peak discharges.
   iii. Hydraulics: overview of hydraulic modeling process, including data sources, specific model used, description of existing structures, drainage system characteristics, and other pertinent facts; discussion of design alternatives and the results of respective hydraulic modeling for the scenarios evaluated; hydraulic model output data for existing and proposed conditions
   iv. Summary of Conclusions / Recommendations: summary of study objectives, alternatives considered, analysis findings, and recommended solutions.
   v. Exhibits: including at a minimum, location map, topography map, drainage area map, land-use map, and FEMA FIRM

vi. Appendices: detailed hydrologic calculations, models, model output files, photographs, and other pertinent information
vii. Compact Disc: including PDF of full report and exhibits and all appendices (including hydrologic and hydraulic models)

161.2. **Scour Analyses and Stream Migration Studies**

The Engineer shall prepare a scour analysis using methodology approved by the State for the Varner Creek bridge crossing. This includes the following tasks:

Perform a scour analysis for the Varner Creek bridge crossing using methodology approved by the State The methodology selected will depend on the site conditions such as the presence of cohesive or cohesionless soil, rock or depth of rock, proposed foundation type, and existing site performance, in accordance with the methodology outlined in the State Geotechnical Manual. The Engineer shall use HEC-18 for sites with cohesionless soils unless otherwise approved by the State. For other conditions, the Engineer may use the TSEAS 1993 (Texas Secondary Evaluation and Analysis for Scour) guidelines as approved by the State.

1. The Engineer shall coordinate with the State prior to commencing any work on any Stream Migration Study. This coordination shall include consultation with the appropriate State technical expert.
2. The Engineer shall coordinate with the State the potential scour depths, envelope and any recommended countermeasures including bridge design modifications and/or revetment.
3. The Engineer shall prepare a separate scour report for submittal to and approval by the State.

161.3. **Culvert and Ditch/Storm Drain Design**

The Engineer shall develop design details that minimize the interference with the passage of traffic or incur damage to the highway and local property. The Engineer shall provide layouts, drainage area maps, and design of all drainage components. The Engineer shall design all conventional storm drainage and cross drainage in conformance with the latest edition of State Hydraulic Manual, Districts' criteria, and any specific guidance provided by the State. Ditch and internal culvert design shall be performed using XP-SWMM. Storm drain design shall be performed using WinStorm or GEOPAK Drainage, in conjunction with XP-SWMM. Cross drainage design shall be performed using HEC RAS. When oversized storm drains are used for detention, the Engineer shall evaluate the hydraulic gradeline throughout the whole system, within project limits, for the design frequency(ies). The Engineer shall coordinate with the State any proposed changes to the detention systems. The State will assess the effects of such changes on the comprehensive drainage studies. The Engineer shall coordinate with the State and designers of adjacent projects to check that all proposed drainage systems accommodate the proposed construction phasing plan.

The Engineer shall perform the following:

1. Prepare culvert cross sections.
   - Assume 14 culvert layout sheets. See Section 161.1-3 for list of existing culvert crossings.
2. Identify areas requiring trench protection, excavation, shoring and de-watering.
3. Prepare drainage area maps.
   - Assume 4 overall drainage area map sheets (drainage crossings)

- Assume 18 drainage area map sheets (roadway drainage)

4. Prepare plan/profile sheets for storm drain systems and outfall ditches.
5. Prepare drainage calculation sheets, including runoff calculations, storm sewer calculations, and ditch calculations
   - Assume 12 drainage computation sheets
6. Include plan/profile information for drainage ditches on the roadway plan and profile sheets
   - Assume 90 roadway plan and profile sheets (SH 36 and cross streets)
7. Prepare plan/profile sheets for storm drain systems
   - Assume 16 storm sewer plan and profile sheets (location to be determined)
   - Assume 12 storm sewer later sheets (location to be determined)
8. Prepare plan/profile sheets for outfall ditches
   - Assume 4 sheets for Varner Creek crossing (plan and profile and details)
9. Select standard details from State or District's list of standards for items such as inlets, manholes, junction boxes and end treatment, etc.
10. Prepare details for non-standard inlets, manholes and junction boxes.
    - Assume no more than 10 non-standard inlets, manholes and junction boxes. Assuming 2 sheets per non-standard structure for a total of 20 sheets.
11. Prepare drainage details for outlet protection, outlet structures and utility accommodation structures.
    - Assume outlet protection / utility accommodate for no more than 5 structures. Assuming 2 sheets per structure for a total of 10 sheets.
12. Identify pipe strength requirements.
13. Prepare drainage facility quantity summaries.
    - Assume 15 drainage quantity sheets
14. Identify potential utility conflicts and design around them, wherever possible.
15. Take into consideration pedestrian facilities, utility impacts, driveway grades, retaining wall and concrete traffic barrier drainage impacts.
16. Identify existing ground elevation profiles at the ROW lines on storm sewer plan and profile sheets.
17. Prepare Hydraulic Data Sheets for the following bridge and bridge-class crossings:
    - Station 480+00 – Varner Creek Bridge. Assume 1 hydraulic data sheet
    - Station 404+20 – Culvert 9 Bridge Class Culvert. Assume 1 hydraulic data sheet

161.4. **Temporary Drainage Facilities**

The Engineer shall develop plans for all temporary drainage facilities necessary to allow staged construction of the project and to conform with the phasing of adjacent construction projects without significant impact to the hydraulic capacity of the area. Drainage area maps are not required for temporary drainage.

161.5. Layout, Structural Design and Detailing of Drainage Features.

The Engineer shall also develop layouts for the following:

1. Culverts: New culverts; culvert replacement. See section 161.3 for additional details.
2. Storm Sewers: New or modified storm sewers; inlets; manholes; trunk lines. See section 161.3 for additional details.
3. Outfall channels within existing ROW. See section 161.3 for additional details.
4. Bridge deck drainage systems, including internal drainage piping within the bents where required on structures.

- Assume one (1) bridge deck drainage system at Varner Creek. Assume 2 sheets.

5. Detention ponds, associated outlet structures and details.
   - Assume one (1) detention basin at Varner Creek. Assume 4 sheets.
   - If additional off-site detention basins are needed, the work shall be considered as additional work.

The Engineer shall use standard details where practical.

161.6. **Floodplain Cut and Fill**
Using water surface elevation profiles determined by the comprehensive drainage study, the Engineer shall calculate proposed cut and fill volumes below the 100 year flood elevation. Fill within the floodplain is anticipated to potentially occur at only one location, the Varner Creek crossing. Mitigation for fill within the regulatory floodplain will be coordinated with other stormwater detention or bridge improvement activities.

161.7. Reports

1. Letter Report – the Engineer shall prepare a brief letter report summarizing data collection efforts and preliminary findings. This report shall be prepared when the hydrologic and hydraulic analysis is approximately 30% complete. This report shall include the results of the existing condition hydraulic analysis of cross drainage structures. Profiles generated by this effort shall be utilized in the development of design roadway profiles. These profiles must be submitted to and approved by the State before continuing with the preparation of the comprehensive drainage report.
2. Draft Drainage Report (Three [3] copies) – The report shall document and justify all data, boundary conditions, assumptions, methodologies, and results. The text, tables, exhibits, and appendices shall document clearly and concisely the work performed and results found. The report shall provide recommendations for critical review by the State. The text, tables, exhibits, and appendices (including computer models) shall be saved on a compact disc and included with each report. Assume one round of comments from the State. The Engineer shall address all State comments.
3. Finalized Drainage Report (Four [4] copies) - The report shall be signed and sealed by a professional engineer.

FC 160 (162) – Roadway Design
Signing, Pavement Markings and Signalization (Permanent)

162.1. Signing. The Engineer shall prepare drawings, specifications and details for all signs. The Engineer shall coordinate with the State (and other Engineers as required) for overall temporary, interim and final signing strategies and placement of signs outside contract limits. The Engineer shall:

- Prepare sign detail sheets for small guide signs showing dimensions, lettering, shields, borders, corner radii, etc., and shall provide a summary of small signs.
- Illustrate and number the proposed signs on plan sheets.
- Select each sign foundation from State Standards.

162.2. Pavement Marking. The Engineer shall detail both permanent and temporary pavement markings and channelization devices on plan sheets. The Engineer shall coordinate with the

State (and other Engineers as required) for overall temporary, interim, and final pavement marking strategies. The Engineer shall select Pavement markings from the latest State standards.

The Engineer shall provide the following information on sign/pavement marking layouts:

- Roadway layout.
- Center line with station numbering.
- Culverts and other structures that present a hazard to traffic.
- Existing signs to remain, to be removed, or to be relocated.
- Proposed signs (illustrated, numbered and size).
- Proposed markings (illustrated and quantified) which include pavement markings, object markings and delineation.
- Proposed intersection signing and pavement layouts
- Quantities of existing pavement markings to be removed.
- Proposed delineators and object markers.
- The number of lanes in each section of proposed highway and the location of changes in numbers of lanes.
- Right-of-way limits.
- Direction of traffic flow on all roadways.

162.3. Traffic Warrant Studies. The Engineer shall prepare a traffic signal warrant study to support their recommendation for the continuous activation of an existing traffic signal or a proposed traffic signal based on projected volumes. Each warrant study shall include addressing pedestrian signals along with obtaining both traffic and pedestrian counts.

The Engineer shall implement each proposed traffic signal improvement within existing State right-of-way unless otherwise approved by the State. The Engineer shall refer to latest version of the TMUTCD, *Traffic Signal Manual*, and The State's roadway (ramp) and traffic standards for work performed for either temporary or permanent traffic signals. The Engineer shall develop and include a timing plan for each signal improvement.

List of Intersection for Signal Warrant Studies:

1. CR 11
2. FM 1462 (currently signalized)
3. CR 264N
4. CR 264U (Woodward Street)
5. CR 264 (Mulcahy Avenue)
6. CR 15 (Bryan Street)
7. CR 18
8. CR 20 (Weinbrenner Road)
9. CR 19 (Mutala Road)
10. CR 21 (Gus Schlitskus Road)
11. CR 485 (Vickkoenig Road)
12. CR 5/CR 23 (Rhodes School Road)
13. CR 828 (Coltron Road)
14. CR 483/CR 4 (Damon W. Columbia Road)
15. CR 467 (Hogg Ranch Road)
16. CR 818/CR 837

The Engineer shall follow the process described below in preparing the Traffic Warrant Studies:

1. Coordinate with TxDOT for traffic counts
2. Review and develop existing existing TMC for warrant study
3. Develop future year TMC for warrant study
4. Develop base model for warrant analysis
5. Perform existing condition warrant analysis
6. Perform future condition warrant analysis
7. Summarize warrant analysis results

162.4. Traffic Signals. Based upon the results of the Traffic Warrant Studies, the Engineer shall identify and prepare Traffic Signal Plans for all warranted traffic signals. The Engineer shall confirm the power source for all signals and coordinate with the appropriate utility agency. Traffic Signal Plans shall be signed and sealed by a Texas Registered Professional Engineer. The Engineer shall develop all quantities, general notes, specifications and incorporate the appropriate agency standards required to complete construction. Traffic signal poles, fixtures, signs, and lighting shall be designed per the Green Ribbon Report recommendations and standards.

List of Intersections for signal modifications:
1. SH 36 at FM 1462

No new signal design is included as a part of this scope.

The following information shall be provided in the Traffic Signal Plans:
1. Layout

   a. Estimate and quantity sheet
      (1) List of all bid items
      (2) Bid item quantities
      (3) Specification item number
      (4) Paid item description and unit of measure
   b. Basis of estimate sheet (list of materials)
   c. General notes and specification data.
   d. Condition diagram
      (1) Highway and intersection design features
      (2) Roadside development
      (3) Traffic control including illumination
   e. Plan sheet(s)
      (1) Existing traffic control that will remain (signs and markings)
      (2) Existing utilities
      (3) Proposed highway improvements
      (4) Proposed installation
      (5) Proposed additional traffic controls
      (6) Proposed illumination attached to signal poles.
      (7) Proposed power pole source
   f. Notes for plan layout
   g. Phase sequence diagram(s)

(1) Signal locations
(2) Signal indications
(3) Phase diagram
(4) Signal sequence table
(5) Flashing operation (normal and emergency)
(6) Preemption operation (when applicable)
(7) Contact responsible Agency to obtain interval timing, cycle length and offset

h. Construction detail sheets(s)
(1) Poles (State standard sheets)
(2) Detectors
(3) Pull Box and conduit layout
(4) Controller Foundation standard sheet
(5) Electrical chart
(6) GPS, battery backup evaluation switch

i. Marking details (when applicable)
j. Aerial or underground interconnect details (when applicable)

2. General Requirements
a. Contact local utility company
b. Confirm power source
c. Prepare governing specifications and special provisions list
d. Prepare project estimate

3. Summary of Quantities
a. Small signs tabulation
b. Large signs tabulation including all guide signs

4. Sign Detail Sheets
a. All signs except route markers
b. Design details for large guide signs
c. Dimensioning (letters, shields, borders, etc.)
d. Designation of shields attached to guide signs

FC 160 (163) – Roadway Design
Miscellaneous (Roadway)

The Engineer shall provide the following services:

163.1. Traffic Control Plan, Detours, Sequence of Construction

The Engineer shall prepare Traffic Control Plans (TCP) for the project. The TCP phasing is anticipated to be in 2 major phases with additional phasing at the intersections, and through Damon.

The Engineer shall complete Form 2229-Significant Project Procedures along with Page 4 of Form 1002, specifically titled Accelerated Construction Procedures. A detailed TCP shall be developed in accordance with the latest edition of the TMUTCD. The Engineer shall implement the current Barricade and Construction (BC) standards as applicable. The Engineer shall interface and coordinate phases of work, including the TCP, with adjacent Engineers.

1. The Engineer shall provide a written narrative of the construction sequencing and work activities per phase and determine the existing and proposed traffic control devices (regulatory signs, warning signs, guide signs, route markers, construction pavement markings, barricades, flag personnel, temporary traffic signals, etc.) to be used to handle traffic during each construction sequence. The Engineer shall show proposed traffic control devices at grade intersections during each construction phase (stop signs, flagperson, signals, etc.). The Engineer shall show temporary roadways, and detours required to maintain lane continuity throughout the construction phasing. If temporary retaining walls are required, show the limits on the applicable TCP.
2. The Engineer shall prepare typical sections for traffic control to be shown in the TCP.
3. The Engineer shall prepare over traffic control sequencing layout at 1:400 scale and the traffic control layouts at 1:100 scale. The Engineer shall prepare intersection layouts for TCP, as necessary

4. Coordinate with the State in scheduling a Traffic Control Workshop and submittal of the TCP for approval by the Traffic Control Approval Team (TCAT). The Engineer shall assist the State in coordinating mitigation of impacts to adjacent schools, emergency vehicles, pedestrians, bicyclists and neighborhoods.
5. Develop each TCP to provide continuous, safe access to each adjacent property during all phases of construction and to preserve existing access. The Engineer shall notify the State in the event existing access must be eliminated, and must receive approval from the State prior to any elimination of existing access.
6. Design temporary drainage to replace existing drainage disturbed by construction activities or to drain detour pavement. Temporary drainage will be shown on the TCP Plan Layouts and/or addressed with miscellaneous detail sheets.
7. Prepare each TCP in coordination with the State. The TCP shall include interim signing for every phase of construction. Interim signing shall include regulatory, warning, construction, route, and guide signs shall be shown on the TCP Plan Layouts. The Engineer shall interface and coordinate phases of work, including the TCP, with adjacent Engineers, which are responsible for the preparation of the PS&E for adjacent projects.
8. Maintain continuous access to abutting properties during all phases of the TCP. The Engineer shall develop a list of each abutting property along its alignment. The Engineer shall prepare up to six (6) exhibits for and attend up to two (2) meetings with the public, as requested by the State.
9. Make every effort to prevent detours and utility relocations from extending beyond the proposed Right-of-way lines. If it is necessary to obtain additional permanent or temporary easements and Right-of-Entry, the Engineer shall notify the State in writing of the need and justification for such action. The Engineer shall identify and coordinate with all utility companies for relocations required.
10. Describe the type of work to be performed for each phase of sequence of construction and any special instructions (e.g. storm sewer, culverts, bridges, railing, illumination, signals, retaining walls, signing, paving surface sequencing or concrete placement, ROW restrictions, utilities, etc.) that the contractor should be made aware to include limits of construction, obliteration, and shifting or detouring of traffic prior to the proceeding phase.
11. Include the work limits, the location of channelizing devices, positive barrier, location and direction of traffic, work area, stations, pavement markings, and other information deemed necessary for each phase of construction.
12. The Engineer shall prepare any special details required for TCP (driveway /minor intersections/temp drainage/culverts).

13. The Engineer shall identify and incorporate applicable TxDOT TCP standard details
14. The Engineer shall identify and delineate any outstanding ROW parcels.
15. Delineate areas of wetlands on traffic control plans as shown in the Enviromental Assessment (EA) document to be provided by the State.

163.2. Temporary Traffic Signals and Illumination

If the Engineer determines that an existing traffic signal will be affected by the project, then the Engineer shall address the adjustment/realignment of traffic signal heads and the use of detection for mainlanes and side streets on the plans. The Engineer shall obtain traffic movement counts to address any new timing plans to minimize the impact during construction and to determine the storage length needed for left and right turn movements. The Engineer shall address lighting of signalized intersections, and shall coordinate with local utilities as approved by the State.

163.3. Value Engineering Study:

The ENGINEER shall support a Value Engineering (VE) study by providing two (2) team members for the study. The team members shall be available and attend the VE study kick-off meeting on the first day and the final VE study presentation only.

163.4. StormWater Pollution Prevention Plans (SW3P)

The Engineer shall develop SW3P, on separate sheets from (but in conformance with) the TCP, to minimize potential impact to receiving waterways. The SW3P shall include text describing the plan, quantities, type, phase and locations of erosion control devices and any required permanent erosion control. SW3P shall be developed at 1:100 scale (double banked) that follows the TCP phasing. It is estimated 42 sheets for the entire section of the project for all phases on construction. Engineer shall be responsible for preparing EPIC sheets and TxDOT's SW3P form.

163.5. Special Utility Details (Water, Sanitary Sewer):

The Engineer shall develop special details to accommodate or adjust utilities. Prior to developing any special utility detail, the Engineer shall notify the State in writing regarding each utility conflict that may require an accommodation. As directed by the State the Engineer shall coordinate with each utility to develop each special detail. The Engineer shall develop each utility detail or accommodation in compliance with the State's *Utility Accommodation Rules*. The Engineer shall prepare each plan sheet, miscellaneous utility detail sheet, special specification, special provision, and special note required to incorporate the details into the State's plans plans for approximately:

1. 10,000 LF of water line relocation of sizes 6-inch to 12-inch.
2. 10,000 LF of sanitary sewer relocation of sizes 6-inch to 16-inch.

163.6. Compute and Tabulate Quantities

The Engineer shall provide the summaries and quantities within all formal submittals, including 30%, 60%, 90% and final submittals. Summary sheets shall include, roadway, removal, TCP, drainage, utilities, SW3P, traffic signals, signing & striping and miscellaneous quantities.

163.7. Specifications and General Notes:

The Engineer shall identify necessary standard specifications, special specifications, special provisions and the appropriate reference items. The Engineer shall prepare General Notes from the District's *Master List of General Notes*, Special Specifications and Special Provisions

for inclusion in the plans and bidding documents. The Engineer shall provide General Notes, Special Specifications and Special Provisions in the required format, and other forms such as F 1002, Notice of Intent, Engineer Certification, Right of Way Certifications, etc.

163.8. Estimate:

The Engineer shall independently develop and report quantities/estimates necessary to construct contract in standard State bid format at the 30%, 60%, 90%, milestones and Final PS&E submittals. The estimate shall be provided in DCIS format at the 90% and Final PS&E submittals.

163.9. Miscellaneous Structural Details

The Engineer shall provide necessary details required to supplement standard details.

163.10. Construction Time Determination:

The Engineer shall prepare an estimated construction time determination, using the latest version of Primavera software or Microsoft Project.

163.11. Prepare Submittal Packages:

The Engineer shall prepare and package the following deliverable packages for the State:

1. 30% Submittal Package
2. 60% Submittal Package
3. 90% Submittal Package
4. 95% Submittal Package
5. Final Submittal Package

163.12. Quality Control/Quality Assurance Reviews

Quality Control (QC) shall be performed inclusive with the design and plans production efforts. QC reviews shall be performed on sub-consultant deliverables prior to submittal to the State. Independent QC reviews for roadway, TCP, utilities, traffic, drainage and bridge shall be performed prior to each submittal package to the State.

163.13. Testimony for Right of Way Hearings:

If required, the Engineer shall support and testify in possible Right of Way hearings, as the Engineer of record in the Design of the SH 36 project, at the request of the State or the Attorney General's office you shall be required to do the following:

1. Research, study, analyze and review the SH 36 project and the assigned parcels for acquisition;
2. If requested, prepare litigation designs and standard 8.5 x 11 inch, 11 x 17 inch or 24 x 36 inch paper exhibits. These deliverables are considered to be litigation documents and not engineering documents requiring a P.E. seal.
3. Be available to prepare for and testify at hearings, depositions and trials, if requested, and;
4. Be available to assist and consult with the Attorney General's Office, with case preparation, if requested.

We are assuming assisting state with up to fifty four (54) hearings and two (2) exhibits for each hearing.

FC 160 (165) – Roadway Design
Traffic Management Systems (Permanent).

The Engineer shall design and provide details as a part of the State's Intelligent Transportation System to be managed from TranStar. The design shall include elements such as dynamic message signs, closed-circuit Television (CCTV) cameras, and loop or other vehicle detection devices. The Engineer shall fully design and details including conduit and cable, support structures, control equipment, etc. necessary to implement the system. The Engineer shall fully design and prepare communication backbone details to include fiber optic network design including details such as fiber optic cable Splicing Diagrams. The Engineer shall design all electrical circuits to support all devices proposed for the project. Design specifications shall be defined in the work authorization. The Engineer shall also coordinate with the State Computerized Transportation Management Systems (CTMS) design section at the Houston District Office should the State have a computerized transportation management system under construction or in place and operating within the project limits. The Engineer will incorporate continuous conduit from STA: 0+00 to STA: 677+00(approximately) for CTMS.

This scope assumes the following for the 13 mile corridor:
1. Full CCTV coverage, 13 Cameras (approximately 1 mile spacing)
2. 26 Detector Stations
3. 4 Arterial Dynamic message sign (DMS)
4. Estimate 3 Communication HUBs
5. 13 miles of fiber/Ethernet network
6. Provide empty spare conduit on opposite of the road
7. Most of the work will be contained with the project limits (Sta 0+00 – Sta 677+00), may require some work beyond the project limits to tie the network to adjacent sections.
8. Connections beyond the project limits will be performed in coordination with adjacent projects.

The Intelligent Traffic System (ITS) design process for this project may follow the process listed below:

1. Meetings and coordination with TxDOT and adjacent sections.
2. Identify initial device locations with TxDOT.
3. Confirm device locations with TxDOT.
4. Prepare ITS layout sheets.
5. Prepare system block diagram.
6. Develop ITS plan view sheets.
7. Prepare DMS structure sheets.
8. Prepare CCTV detail sheets.
9. Prepare vehicle detection detail sheets.
10. Prepare communication hub details.
11. Prepare communication fiber optic plant sheets.
12. Develop miscellaneous ITS details.

FC 160(170) – Roadway Design
Bridge Design

170.1. Bridge Layouts. The Engineer shall prepare the bridge layout plan sheet. The Engineer shall determine the location of each soil boring needed for foundation design in accordance with the *Geotechnical Manual.*

Prior to preparation of each bridge layout, the Engineer shall prepare a comparative cost analysis of bridge structures to determine: (1) the optimum bridge beams for waterway, (2) the optimum bridge structure versus roadway embankment, pavement, soil stabilization, and retaining walls.

The Engineer shall submit each bridge layout early in the plan preparation process to obtain approval from the State. The Engineer shall comply with all relevant sections of the latest edition of the State's LRFD Bridge Design Manual, Bridge Project Development Manual, Bridge Detailing Manual, and AASHTO LRFD Bridge Design Specifications and respective checklists. Each bridge layout sheet shall include bridge typical sections, structural dimensions, abutment and bent locations, superstructure and substructure types, pertinent hydrologic and hydraulic data and scour analysis envelope. The Engineer shall locate and plot all soil borings and utilities, show proposed retaining walls, and, for staged construction, indicate limits of existing bridge for removal and reconstruction.

The Bridge Layouts on Plan View shall contain the following information, where applicable:

1. Horizontal curve information or bearing of centerlines/baselines including horizontal, vertical and template information of all roadways or railroads crossed.
2. Bearing of centerline or reference line
3. Skew angle(s)
4. Slope for header banks and approach fills
5. Control stations at beginning and ending of bridge (with deck elevation)
6. Approach pavement and crown width
7. Bridge roadway width and curbs, face of rail, shoulders or sidewalks
8. Approach slab and curb returns
9. Limits and type of riprap
10. Proposed features under structure
11. Location of profile grade line
12. North arrow
13. Typical bridge roadway section including preliminary proposed bean types and spacing
14. Cross slope and superelevation data
15. Minimum horizontal clearance
16. Location of soil bore holes (station and offset)
17. Bent stations and bearings
18. Retaining wall locations
19. Traffic flow directional arrows
20. Railing types shown
21. Joint types and seal size, if used
22. Beam line number consistent with span details
23. Critical horizontal clearance (location of railroad tracks, nearby structures and utilities)

Bridge Layouts in Elevation View should contain the following information:
1. Type of foundation
2. Finished grade elevations at beginning and end of bridge
3. Overall length of structure
4. Length, type of spans and units
5. Type of railing
6. Minimum calculated vertical clearance(s)

7. Existing and proposed ground lines clearly marked
8. Grid elevations and stations
9. Bent numbers encircled
10. Standard title
11. Profile grade data
12. Type of riprap
13. Soil bore information with penetrometer test data
14. Fixed/expansion condition of all bents
15. Number, size and length of foundations

170.2. Bridge Detail Summary. Following final approval of the Bridge Layouts, the Engineer shall prepare bridge quantities, estimates and specifications in accordance to the above-listed manuals.

170.3. Bridge Structural Details. The Engineer shall prepare each structural design and develop detailed structural drawings of all required details in compliance with above-listed manuals.

Additionally, the Engineer shall perform the following tasks:

- Perform calculations for design of bridge abutments.
- Perform calculations for bridge slab design.
- Perform calculations to determine elevations of bridge substructure and super structure elements, including bents.
- Perform calculations for bridge prestressed girder design.
- Prepare necessary foundation details and plan sheets.
- Prepare plan sheets for abutment design.
- Prepare plan sheets for additional abutment details.
- Prepare framing plan and slab plan sheets.
- Prepare plan sheets for span details.
- Compute and prepare tables for bearing seat elevations, dead load deflections, etc.
- Design beams (IGND) and prepare beam design tables.
- Prepare Bridge Summary Sheet.
- Include soil boring sheets.
- Identify appropriate TxDOT standard details.

170.4. Bridges. The Engineer shall prepare bridge layouts and prepare details at the following location:

- SH 36 at Varner Creek
  - SH 36 NB Bridge, approximately 165' long and 45' wide
  - SH 36 SB Bridge, approximately 165' long and 45' wide
- Bridge Loading
  - Live Load. All bridge structures shall be designed for HL-93 loading.
  - Dead Load. Design for self-weight of the structure only; no provisions will be made for utility loads, future wearing surface loads or sign structures on the bridge.

FC 309 (309) – Design Verification/ Changes/ Alteration Construction Phase Services

The Engineer shall provide Construction Phase Services at the written request of the State's project manager. The written request shall include a description of the work requested, a mutually agreed upon time limit, and any special instructions for coordination and submittal.

These services shall include, but are not limited to the following:

- Review and approval of shop drawings
- Responding to requests for information (RFIs)
    - Answering general questions
    - Providing clarification
- Assist the State in preparing change orders to the project plans where warranted by a change in field conditions or a change requested by the State.
- Other project related tasks in support of the State during construction

Deliverables

Plans

The Engineer shall provide the following information at each submittal:

1. 30% Plans Submittal

    1.1. 12 sets of 11" x 17" plan sheets for the State District Review.
    1.2. Estimate of construction cost.
    1.3. Engineer's internal QA/QC markup set.
    1.4. Form 1002 and Design Exceptions with existing and proposed typical sections, location map and design exception exhibits.
    1.5. 2 sets of 100% bridge layouts.

2. 60% Plans Submittal:

    2.1. 12 sets of 11" x 17" plan sets for the State District review.
    2.2. Estimate of construction cost.
    2.3. Engineer's internal QA/QC marked up set.
    2.4. 1 set of a roll format TCP phasing layouts, 1 .pdf of plans sheets for TCP concept, and significant project procedures form (State Form 2229) to present at the DSRT for the State review.

3. Review Submittal (90%)

    3.1. 12 sets of 11" x 17" plan sheets for the State District Review.
    3.2. Estimate of construction cost.
    3.3. Marked up general notes
    3.4. Construction schedule.
    3.5. New Special Specifications and Special Provisions with Form 1814, if applicable.
    3.6. Engineer's internal QA/QC marked up set.
    3.7. Other supporting documents.

4. District Review Submittal (95%):

    4.1. 12 sets of 11" x 17" plan sheets for the State district review
    4.2. List of governing Specifications and Special Provisions in addition to those required.
    4.3. Marked up general notes.
    4.4. Plans estimate.
    4.5. New Special Specifications and Special Provisions with Form 1814, if applicable.
    4.6. Triple Zero Special Provisions.
    4.7. Engineer sign, seal and date supplemental sheets (8 ½" x 11").
    4.8. Contract time determination summary.
    4.9. Significant project procedures form.
    4.10. Right-of-Way and utilities certification.
    4.11. Temporary road closure letters.
    4.12. Construction speed zone request.
    4.13. Engineer's internal QA/QC marked-up set.
    4.14. Other supporting documents.

5. Final submittal (100%).

    5.1. 2 paper sets of 11" x 17"
    5.2. Revised supporting documents from 95% review comments.
    5.3. Final plans in PDF portfolio format. Plans may be signed and sealed electronically.

Electronic Copies

The Engineer shall furnish the State with a CD/DVD of the final plans in the current CADD system used by the STATE, .pdf format, and in the District's File Management System (FMS) format.

The Engineer shall also provide separate CD/DVD containing cross section information (in dgn, XLR & ASCII formats) for the contractor's use.

Primavera (P3) file or the latest scheduling program used by the State for construction time estimate.

Calculations

The Engineer shall provide a 3-ring binder with all quantity and non-structural design calculations.

Provide a bound copy of all engineering calculations, analysis, input calculations, quantities, geometric designs (GEOPAK GPK files), etc. relating to the project's structural elements. Project structural elements include, but are not limited to: bridges, retaining walls, overhead sign foundations, high-mast illumination foundations, non-standard culverts, custom headwalls and drainage appurtenances.

Provide working copies of all spreadsheets and output from any programs utilized on a CD/DVD in a universally reliable format.

The Engineer may provide the requested information on a CD/DVD. Submit element normally bound using a .pdf format.

Legacy Contract No. 12-5SDP5124
Peoplesoft Contract No. 5003

ATTACHMENT D
WORK AUTHORIZATION
D-1
WORK AUTHORIZATION NO. ____
CONTRACT FOR ENGINEERING SERVICES

THIS WORK AUTHORIZATION is made pursuant to the terms and conditions of Article 5 of Engineering Contract No. _____ (the Contract) entered into by and between the State of Texas, acting by and through the Texas Department of Transportation (the State), and _____ (the Engineer).

PART I. The Engineer will perform engineering services generally described as _____ in accordance with the project description attached hereto and made a part of this Work Authorization. The responsibilities of the State and the Engineer as well as the work schedule are further detailed in exhibits A, B and C which are attached hereto and made a part of the Work Authorization.

PART II. The maximum amount payable under this Work Authorization is $_____ and the method of payment is _____ as set forth in Attachment E of the Contract. This amount is based upon fees set forth in Attachment E, Fee Schedule, of the Contract and the Engineer's estimated Work Authorization costs included in Exhibit D, Fee Schedule, which is attached and made a part of this Work Authorization.

PART III. Payment to the Engineer for the services established under this Work Authorization shall be made in accordance with Articles 3 thru 5 of the contract, and Attachment A, Article 1.

PART IV. This Work Authorization shall become effective on the date of final acceptance of the parties hereto and shall terminate on _____, unless extended by a supplemental Work Authorization as provided in Attachment A, Article 1.

PART V. This Work Authorization does not waive the parties' responsibilities and obligations provided under the Contract.

IN WITNESS WHEREOF, this Work Authorization is executed in duplicate counterparts and hereby accepted and acknowledged below.

THE ENGINEER	**THE STATE OF TEXAS**
_____ (Signature)	_____ (Signature)
_____ (Printed Name)	_____ (Printed Name)
_____ (Title)	_____ (Title)
_____ (Date)	_____ (Date)

LIST OF EXHIBITS

Exhibit A	Services to be provided by the State
Exhibit B	Services to be provided by the Engineer
Exhibit C	Work Schedule
Exhibit D	Fee Schedule/Budget
Exhibit H-2	Subprovider Monitoring System Commitment Agreement

Legacy Contract No. 12-5SDP5124
Peoplesoft Contract No. 5003

ATTACHMENT D
D-2
SUPPLEMENTAL WORK AUTHORIZATION NO. ____
WORK AUTHORIZATION NO. ____
CONTRACT FOR ENGINEERING SERVICES

THIS SUPPLEMENTAL WORK AUTHORIZATION is made pursuant to the terms and conditions of Article 5 Contract No. _____ hereinafter identified as the "Contract," entered into by and between the State of Texas, acting by and through the Texas Department of Transportation (the State), and _____ (the Engineer).

The following terms and conditions of Work Authorization No. ____ are hereby amended as follows:

This Supplemental Work Authorization shall become effective on the date of final execution of the parties hereto. All other terms and conditions of Work Authorization No. ____ not hereby amended are to remain in full force and effect.

IN WITNESS WHEREOF, this Supplemental Work Authorization is executed in duplicate counterparts and hereby accepted and acknowledged below.

THE ENGINEER	**THE STATE OF TEXAS**
_____ (Signature)	_____ (Signature)
_____ (Printed Name)	_____ (Printed Name)
_____ (Title)	_____ (Title)
_____ (Date)	_____ (Date)

ATTACHMENT E

FEE SCHEDULE
(Final Cost Proposal)

This attachment provides the basis of payment and fee schedule. **The basis of payment for this contract is indicated by an "X" in the applicable box.** The basis shall be supported by the Final Cost Proposal (FCP) shown below. If more than one basis of payment is used, each one must be supported by a separate FCP.

"X"	Basis	
X	Lump Sum	The lump sum shall be equal to the maximum amount payable. The lump sum includes all direct and indirect costs and fixed fee. The Engineer shall be paid pro rata based on the percentage of work completed. For payment the Engineer is not required to provide evidence of actual hours worked, travel, overhead rates or other evidence of cost.
X	Unit Cost	The unit cost(s) for each type of unit and number of units are shown in the FCP. The unit cost includes all direct and indirect costs and fixed fee. The Engineer shall be paid based on the type and number of units fully completed and the respective unit cost. For payment, the Engineer is not required to provide evidence of actual hours worked, travel, overhead rates or any other cost data. The FCP may include special items, such as equipment which are not included in the unit costs. Documentation of these special costs may be required. The maximum amount payable equals the total of all units times their respective unit cost plus any special direct items shown.
X	Specified Rate Basis	The specified rates for each type of labor are shown in the FCP below. The FCP may include special items, such as equipment which are not included in the specified rates. Payment shall be based on the actual hours worked multiplied by the specified rate for each type of labor plus other agreed to special direct cost items. The specified rate includes direct labor and indirect cost and fixed fee. The State may request documentation of reimbursable direct costs including hours worked. Documentation of special item costs may be required. The specified rate is not subject to audit.
X	Cost Plus Fixed Fee	Payment shall be based on direct and indirect costs incurred plus a pro rata share of the fixed fee based on the ratio of labor and overhead cost incurred to total estimated labor and overhead cost in the FCP or the percentage of work completed. The invoice must itemize labor rates, hours worked, other direct costs and indirect costs. The Engineer may be required to provide documentation of hours worked and any eligible direct costs claimed. The provisional overhead rate charged is subject to audit and adjustment to actual rates incurred. The FCP below shows the hourly rates for labor, other direct expenses including but not limited to travel and allowable materials, provisional overhead rate and the fixed fee. __ A. Actual Cost Plus Fixed Fee - Actual wages are paid (no minimum, no maximum. This option does not apply to Indefinite Deliverable Contracts.) X B. Range of Cost Plus Fixed Fee – Actual wages must be within the allowable range shown on the Final Cost Proposal.

ATTACHMENT E – FEE SCHEDULE

Final Cost Proposal (FCP) Supporting Basis of Payment

* The **MAXIMUM AMOUNT PAYABLE** is **$4,510,662.26**.

The maximum amount payable is based on the following data and calculations:

* The maximum amount payable must be based on the contract scope. The work authorization fee schedules will be derived from this attachment.

* Range of cost plus fixed fee labor rates billed to the State for specific employee of the Engineer or its Sub-providers may not increase their rate by more than 3.4 percent within a classification within any twelve month period.

ATTACHMENT E- FEE SCHEDULE

COST PLUS FIXED FEE PAYMENT BASIS

PRIME PROVIDER NAME: AECOM Technical Services, Inc.

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY RATE	
		MINIMUM	MAXIMUM
Project Manager	10 to 20	$7.25	$78.00
Quality Manager	10 to 20	$7.25	$79.00
Senior Engineer	15+	$7.25	$70.00
Project Engineer	10 to 15	$7.25	$53.00
Design Engineer	5 to 10	$7.25	$47.00
Engineer-In-Training	1 to 5	$7.25	$34.00
Senior Engineer Tech	15+	$7.25	$40.00
Engineer Tech	5 to 15	$7.25	$35.56
Junior Engineer Tech	1 to 5	$7.25	$27.00
Senior CADD Operator	15+	$7.25	$35.00
CADD Operator	5 to 15	$7.25	$29.00
Junior CADD Operator	1 to 5	$7.25	$25.32
Admin/Clerical		$7.25	$23.00
Senior Hydrologist	25+	$7.25	$82.00
INDIRECT COST RATE:	**149.10%**		
PROFIT RATE:	**10.00%**		

Actual rates to be billed not to exceed the maximum shown.

Minimum rate to be billed if actual is less. Documentation of hours worked is necessary for reimbursement.

Cost Plus Fixed Fee Payment Basis: Rates, within the ranges indicated, will be agreed upon for use in calculating the maximum amount not to exceed.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E- FEE SCHEDULE

COST PLUS FIXED FEE PAYMENT BASIS

SUBPROVIDER NAME: Aguirre & Fields, LP

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY RATE	
		MINIMUM	MAXIMUM
Project Manager	10 to 20	$7.25	$72.00
Quality Manager	10 to 20	$7.25	$78.59
Senior Engineer	15+	$7.25	$66.00
Project Engineer	10 to 15	$7.25	$55.00
Design Engineer	5 to 10	$7.25	$42.00
Engineer-In-Training	1 to 5	$7.25	$32.00
Senior Engineer Tech	15+	$7.25	$40.00
Engineer Tech	5 to 15	$7.25	$33.00
Junior Engineer Tech	1 to 5	$7.25	$25.00
Senior CADD Operator	15+	$7.25	$36.00
CADD Operator	5 to 15	$7.25	$28.00
Junior CADD Operator	1 to 5	$7.25	$25.32
Admin/Clerical		$7.25	$25.00
INDIRECT COST RATE:	**185.36%**		
PROFIT RATE:	**10.00%**		

Actual rates to be billed not to exceed the maximum shown.

Minimum rate to be billed if actual is less. Documentation of hours worked is necessary for reimbursement.

Cost Plus Fixed Fee Payment Basis: Rates, within the ranges indicated, will be agreed upon for use in calculating the maximum amount not to exceed.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E- FEE SCHEDULE

COST PLUS FIXED FEE PAYMENT BASIS

SUBPROVIDER NAME: Brown & Gay Engineers, Inc.

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY RATE	
		MINIMUM	MAXIMUM
Project Manager	10 to 20	$7.25	$73.43
Quality Manager	10 to 20	$7.25	$78.59
Senior Engineer	15+	$7.25	$66.00
Project Engineer	10 to 15	$7.25	$48.00
Design Engineer	5 to 10	$7.25	$40.63
Engineer-In-Training	1 to 5	$7.25	$31.05
Senior Engineer Tech	15+	$7.25	$38.00
Engineer Tech	5 to 15	$7.25	$29.75
Junior Engineer Tech	1 to 5	$7.25	$25.00
Senior CADD Operator	15+	$7.25	$31.81
CADD Operator	5 to 15	$7.25	$27.63
Junior CADD Operator	1 to 5	$7.25	$25.32
Admin/Clerical		$7.25	$23.00
INDIRECT COST RATE:	**163.12%**		
PROFIT RATE:	**10.00%**		

Actual rates to be billed not to exceed the maximum shown.

Minimum rate to be billed if actual is less. Documentation of hours worked is necessary for reimbursement.

Cost Plus Fixed Fee Payment Basis: Rates, within the ranges indicated, will be agreed upon for use in calculating the maximum amount not to exceed.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E- FEE SCHEDULE

COST PLUS FIXED FEE PAYMENT BASIS

SUBPROVIDER NAME: Entech Civil Engineers, Inc.

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY RATE	
		MINIMUM	MAXIMUM
Project Manager	10 to 20	$7.25	$74.00
Quality Manager	10 to 20	$7.25	$79.00
Senior Engineer	15+	$7.25	$65.00
Project Engineer	10 to 15	$7.25	$53.00
Design Engineer	5 to 10	$7.25	$44.00
Engineer-In-Training	1 to 5	$7.25	$34.00
Senior Engineer Tech	15+	$7.25	$38.00
Engineer Tech	5 to 15	$7.25	$32.00
Junior Engineer Tech	1 to 5	$7.25	$25.63
Senior CADD Operator	15+	$7.25	$33.00
CADD Operator	5 to 15	$7.25	$29.00
Junior CADD Operator	1 to 5	$7.25	$25.63
Admin/Clerical		$7.25	$24.00
INDIRECT COST RATE:	**143.08%**		
PROFIT RATE:	**10.00%**		

Actual rates to be billed not to exceed the maximum shown.

Minimum rate to be billed if actual is less. Documentation of hours worked is necessary for reimbursement.

Cost Plus Fixed Fee Payment Basis: Rates, within the ranges indicated, will be agreed upon for use in calculating the maximum amount not to exceed.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E- FEE SCHEDULE

COST PLUS FIXED FEE PAYMENT BASIS

SUBPROVIDER NAME: IEA, Inc.

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY RATE	
		MINIMUM	MAXIMUM
Quality Manager	10 to 20	$7.25	$78.59
Senior Engineer	15+	$7.25	$62.75
Project Engineer	10 to 15	$7.25	$48.00
Design Engineer	5 to 10	$7.25	$44.00
Engineer-In-Training	1 to 5	$7.25	$31.05
Senior Engineer Tech	15+	$7.25	$37.75
Engineer Tech	5 to 15	$7.25	$29.75
Junior Engineer Tech	1 to 5	$7.25	$25.00
Senior CADD Operator	15+	$7.25	$31.81
CADD Operator	5 to 15	$7.25	$27.63
Junior CADD Operator	1 to 5	$7.25	$25.32
Admin/Clerical		$7.25	$24.00
INDIRECT COST RATE:	**166.58%**		
PROFIT RATE:	**10.00%**		

Actual rates to be billed not to exceed the maximum shown.

Minimum rate to be billed if actual is less. Documentation of hours worked is necessary for reimbursement.

Cost Plus Fixed Fee Payment Basis: Rates, within the ranges indicated, will be agreed upon for use in calculating the maximum amount not to exceed.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E - FEE SCHEDULE
SPECIFIED RATE PAYMENT BASIS

SUBPROVIDER NAME: Geotest Engineering, Inc.

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY CONTRACT RATE
Project Manager	10 to 20	$173.03
Senior Engineer	15+	$158.87
Project Engineer	10 to 15	$125.84
Design Engineer	5 to 10	$107.53
Engineer-In-Training	1 to 5	$91.23
Senior Engineer Tech	15+	$100.67
Engineer Tech	5 to 15	$80.63
Junior Engineer Tech	1 to 5	$62.92
Senior Geologist	15+	$121.12
Geologist	5 to 15	$95.95
Admin/Clerical		$67.64

Contract rates include labor, overhead, and profit.

All rates are negotiated rates and are not subject to change or adjustment.

Specified Rate Payment Basis - Contract rates to be billed. Documentation of hours must be maintained and is subject to audit.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E - FEE SCHEDULE
SPECIFIED RATE PAYMENT BASIS

SUBPROVIDER NAME: RODS Surveying, Inc.

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY CONTRACT RATE
RPLS - Project Manager	15+	$135.02
RPLS - Task Leader	10+	$119.25
Senior Survey Tech (Must be Surveyor in Training (SIT), or have a minimum of five year's surveying experience)	10 to 15	$78.32
Survey Tech	5 to 10	$68.24
Admin/Clerical	1 to 5	$48.78
Abstractor		$90.52
Flagger		$35.02
Sr. CADD Operator		$98.43

Contract rates include labor, overhead, and profit.

All rates are negotiated rates and are not subject to change or adjustment.

Specified Rate Payment Basis - Contract rates to be billed. Documentation of hours must be maintained and is subject to audit.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E- FEE SCHEDULE

LUMP SUM PAYMENT BASIS

PRIME PROVIDER NAME: AECOM Technical Services, Inc.

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY BASE RATE	HOURLY CONTRACT RATE
Project Manager	10 to 20	$78.00	$213.73
Quality Manager	10 to 20	$79.00	$216.47
Senior Engineer	15+	$70.00	$191.81
Project Engineer	10 to 15	$53.00	$145.23
Design Engineer	5 to 10	$47.00	$128.78
Engineer-In-Training	1 to 5	$34.00	$93.16
Senior Engineer Tech	15+	$40.00	$109.60
Engineer Tech	5 to 15	$35.56	$97.44
Junior Engineer Tech	1 to 5	$27.00	$73.98
Senior CADD Operator	15+	$35.00	$95.90
CADD Operator	5 to 15	$29.00	$79.46
Junior CADD Operator	1 to 5	$25.32	$69.37
Admin/Clerical		$23.00	$63.02
Senior Hydrologist	25+	$82.00	$224.69
INDIRECT COST RATE:	**149.10%**		
PROFIT RATE:	**10.0%**		

Contract rates include labor, overhead, and profit.

All rates are negotiated rates and are not subject to change or adjustment.

Lump Sum Payment Basis - Invoice by deliverable, according to the table of deliverables. Documentation of hours worked not required.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E- FEE SCHEDULE

LUMP SUM PAYMENT BASIS

SUBPROVIDER NAME: Aguirre & Fields, LP

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY BASE RATE	HOURLY CONTRACT RATE
Project Manager	10 to 20	$72.00	$226.01
Quality Manager	10 to 20	$78.59	$246.68
Senior Engineer	15+	$66.00	$207.17
Project Engineer	10 to 15	$53.00	$166.36
Design Engineer	5 to 10	$42.00	$131.84
Engineer-In-Training	1 to 5	$32.00	$100.45
Senior Engineer Tech	15+	$40.00	$125.56
Engineer Tech	5 to 15	$33.00	$103.59
Junior Engineer Tech	1 to 5	$25.00	$78.47
Senior CADD Operator	15+	$36.00	$113.00
CADD Operator	5 to 15	$28.00	$87.89
Junior CADD Operator	1 to 5	$25.32	$79.46
Admin/Clerical		$23.75	$74.55
INDIRECT COST RATE:	**185.36%**		
PROFIT RATE:	**10.0%**		

Contract rates include labor, overhead, and profit.

All rates are negotiated rates and are not subject to change or adjustment.

Lump Sum Payment Basis - Invoice by deliverable, according to the table of deliverables. Documentation of hours worked not required.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E- FEE SCHEDULE

LUMP SUM PAYMENT BASIS

SUBPROVIDER NAME: AIA Engineers, Ltd.

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY BASE RATE	HOURLY CONTRACT RATE
Project Manager	10 to 20	$73.00	$205.60
Quality Manager	10 to 20	$78.59	$221.33
Senior Engineer	15+	$62.75	$176.73
Project Engineer	10 to 15	$49.75	$140.12
Design Engineer	5 to 10	$43.00	$121.11
Engineer-In-Training	1 to 5	$33.00	$92.94
Senior Engineer Tech	15+	$36.86	$103.81
Engineer Tech	5 to 15	$30.00	$84.49
Junior Engineer Tech	1 to 5	$25.63	$72.19
Senior CADD Operator	15+	$31.81	$89.60
CADD Operator	5 to 15	$28.00	$78.86
Junior CADD Operator	1 to 5	$25.63	$72.19
Admin/Clerical		$22.28	$62.75
INDIRECT COST RATE:	**156.04%**		
PROFIT RATE:	**10.0%**		

Contract rates include labor, overhead, and profit.

All rates are negotiated rates and are not subject to change or adjustment.

Lump Sum Payment Basis - Invoice by deliverable, according to the table of deliverables. Documentation of hours worked not required.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E- FEE SCHEDULE

LUMP SUM PAYMENT BASIS

SUBPROVIDER NAME: Brown & Gay Engineers, Inc.

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY BASE RATE	HOURLY CONTRACT RATE
Project Manager	10 to 20	$73.43	$212.53
Quality Manager	10 to 20	$78.59	$227.45
Senior Engineer	15+	$66.00	$191.03
Project Engineer	10 to 15	$48.00	$138.93
Design Engineer	5 to 10	$40.63	$117.58
Engineer-In-Training	1 to 5	$31.05	$89.88
Senior Engineer Tech	15+	$38.00	$109.98
Engineer Tech	5 to 15	$29.75	$86.11
Junior Engineer Tech	1 to 5	$25.00	$72.36
Senior CADD Operator	15+	$31.81	$92.08
CADD Operator	5 to 15	$27.63	$79.96
Junior CADD Operator	1 to 5	$25.32	$73.27
Admin/Clerical		$23.00	$66.57
INDIRECT COST RATE:	**163.12%**		
PROFIT RATE:	**10.0%**		

Contract rates include labor, overhead, and profit.

All rates are negotiated rates and are not subject to change or adjustment.

Lump Sum Payment Basis - Invoice by deliverable, according to the table of deliverables. Documentation of hours worked not required.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E- FEE SCHEDULE

LUMP SUM PAYMENT BASIS

SUBPROVIDER NAME: Entech Civil Engineers, Inc.

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY BASE RATE	HOURLY CONTRACT RATE
Project Manager	10 to 20	$73.43	$196.34
Quality Manager	10 to 20	$79.00	$211.24
Senior Engineer	15+	$65.00	$173.80
Project Engineer	10 to 15	$53.00	$141.72
Design Engineer	5 to 10	$44.00	$117.65
Engineer-In-Training	1 to 5	$34.00	$90.91
Senior Engineer Tech	15+	$38.00	$101.61
Engineer Tech	5 to 15	$33.00	$88.24
Junior Engineer Tech	1 to 5	$25.63	$68.53
Senior CADD Operator	15+	$33.00	$88.24
CADD Operator	5 to 15	$28.00	$74.87
Junior CADD Operator	1 to 5	$25.63	$68.53
Admin/Clerical		$24.00	$64.17
INDIRECT COST RATE:	**143.08%**		
PROFIT RATE:	**10.0%**		

Contract rates include labor, overhead, and profit.

All rates are negotiated rates and are not subject to change or adjustment.

Lump Sum Payment Basis - Invoice by deliverable, according to the table of deliverables. Documentation of hours worked not required.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E- FEE SCHEDULE

LUMP SUM PAYMENT BASIS

SUBPROVIDER NAME: IEA, Inc.

DIRECT LABOR

LABOR/STAFF CLASSIFICATION	YEARS OF EXPERIENCE	HOURLY BASE RATE	HOURLY CONTRACT RATE
Quality Manager	10 to 20	$78.59	$230.44
Senior Engineer	15+	$62.75	$184.01
Project Engineer	10 to 15	$48.00	$140.75
Design Engineer	5 to 10	$42.00	$123.16
Engineer-In-Training	1 to 5	$31.05	$91.06
Senior Engineer Tech	15+	$37.00	$108.50
Engineer Tech	5 to 15	$29.75	$87.24
Junior Engineer Tech	1 to 5	$25.00	$73.31
Senior CADD Operator	15+	$31.81	$93.29
CADD Operator	5 to 15	$27.63	$81.01
Junior CADD Operator	1 to 5	$25.32	$74.23
Admin/Clerical		$23.00	$67.44
INDIRECT COST RATE:	**166.58%**		
PROFIT RATE:	**10.0%**		

Contract rates include labor, overhead, and profit.

All rates are negotiated rates and are not subject to change or adjustment.

Lump Sum Payment Basis - Invoice by deliverable, according to the table of deliverables. Documentation of hours worked not required.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E- FEE SCHEDULE

UNIT COST PAYMENT BASIS

SUBPROVIDER NAME: Geotest Engineering, Inc.

SERVICES TO BE PROVIDED	Test Code	UNIT	COST
Volumetric Shrinkage	ASTM D427	each	$67.00
Standard Proctor Test	ASTM D698	each	$173.00
Modified Proctor Test	ASTM D1557	each	$190.00
Standard Penetration Test (SPT)	ASTM D1586	LF	$30.00
California Bearing Ratio (Single Sample without MD Curve)	ASTM D1883	test	$208.00
Unconfined Compressive Strength (Soil)	ASTM D2166	each	$44.00
Hydraulic Conductivity Permeability	ASTM D2434	each	$220.00
One Dimensional Consolidation Properties of Soil	ASTM D2435	each	$400.00
Unconfined Compressive Strength (Rock)	ASTM D2938	each	$65.00
Direct Shear Test of Soils Under Consolidated Drained Conditions	ASTM D3080	set of 3	$500.00
Splitting Tensile of Intact Rock Core	ASTM D3967	each	$80.00
Water Stand Pipes	ASTM D4043	LF	$23.00
Calcium Carbonate Content of Soils	ASTM D4373	each	$50.00
Hydraulic Conductivity Permeability	ASTM D4511	each	$225.00
One Dimensional Swell, Methods A & B	ASTM D4546	each	$100.00
One Dimensional Swell, Method C	ASTM D4546	each	$220.00
Permeability of Silt and Clays	ASTM D5084	each	$250.00
Suction Test (Filter Method)	ASTM D5298	each	$45.00
Casagrande Type Piezometers	N/A	each	$100.00
Casagrande Type Piezometers Installation	N/A	each	$300.00
Miscellaneous Testing	N/A	each	$65.00
Vertical Inclinometer	N/A	each	$400.00
Vertical Inclinometer Installation	N/A	each	$800.00
Vibrating Wire Piezometer	N/A	each	$900.00
Vibrating Wire Piezometer Installation	N/A	each	$1,000.00
Soil Boring with SPT	ASTM D1586	LF	$25.00
Soil Boring/Rock Coring with TCP (< 60 ft.)	Tex-132-E	LF	$32.00
Soil Boring/Rock Coring with TCP (> 60 ft.)	Tex-132-E	LF	$36.00
Soil Boring/Rock Coring without TCP (< 60 ft.)	N/A	LF	$25.00
Soil Boring /Rock Coring without TCP (> 60 ft.)	N/A	LF	$29.00
Soil Boring without TCP (< 60 ft.):			
(a) Utlizing Continuous Sampler	ASTM D1587	LF	$25.00
(b) Shelby Push Tubes Extruded in Field	ASTM D1587	LF	$25.00
(c) Augering	N/A	LF	$20.00
Soil Boring without TCP (> 60 ft.):	N/A	LF	$0.00
(a) Utlizing Continuous Sampler	ASTM D1587	LF	$27.00
(b) Shelby Push Tubes Extruded in Field	ASTM D1587	LF	$29.00
Core/drill operator/technician and coring equipment used to drill flexable and rigid pavment (2-man crew)	N/A	Trip	$300.00
(a) 4-in. diameter cores (upto 6-inch thickness)	N/A	Inch	$9.00
(b) 6-in. diameter cores (upto 6-inch thickness)	N/A	Inch	$10.00
(c) 4-in. diameter cores (greater 6-inch thickness)		Inch	$12.00
(d) 6-in. diameter cores (greater than 6-inch thickness)		Inch	$16.00
Drilling Rig Mobilization/De Mobilization			
Truck Mounted Rig		each	$350.00
Marsh Buggy Mounted Rig		each	$425.00
Surcharge for Drilling using Marsh Buggy		feet	$6.00
Steel Manhole Cover for Piezometer		each	$100.00
3 Man Crew (Driller, Logger & helper) travel to/from Job site per day		hour	$160.00
Drilling Standby Time		hour	$130.00
Traffic Control per TMUTCD			
Traffic Signs		day	$450.00
Crash Truck w/attenuator		day	$550.00
Certified Flagman		hour	$35.00
Flashing Arrow Board		day	$120.00
Traffic Control - Off Duty Police Officer		hour	$48.00
Dozer for Site Clearing for Soil Boring Access		day	$1,400.00
Determination of Moisture Content in soils	ASTM D2216	test	$8.00
Liquid Limit of Soils	ASTM D4318	test	$29.00

ATTACHMENT E- FEE SCHEDULE

UNIT COST PAYMENT BASIS

SUBPROVIDER NAME: Geotest Engineering, Inc.

SERVICES TO BE PROVIDED	Test Code	UNIT	COST
Plastic Limit of Soils	ASTM D4318	test	$29.00
Specific Gravity of Soils	ASTM D 854	each	$55.00
Sieve Analysis	ASTM D 422	each	$54.00
Sieve Analysis w/Hydrometer	ASTM D 422	each	$124.00
Percent Passing # 200 sieve	ASTM D 1140	each	$47.00
Soil Cement Testing	Tex-120-E	test	$280.00
Soil Lime Testing	Tex-121-E	test	$280.00
Slurry Testing	Tex-130-E	test	$35.00
Unconsolidated Undrained Triaxial Compressive Strength of Soil	ASTM D 2850	each	$63.00
Consolidated Undrained Triaxial Compression Test (3 Specimens)		set of 3	$1,250.00
Standard Proctor Test, Treated	ASTM D 698	set of 3	$200.00
Modified Proctor Test, Treated	ASTM D 1557	set of 3	$210.00
Density of Undisturbed Soil Specimen	ASTM D 2166	test	$20.00
Bar linear Shrinkage for soils	Tex-107-E	each	$35.00
Pinhole	ASTM D 4647	each	$230.00
Crumb	ASTM D 6572	each	$38.00
Double Hydrometer	ASTM D 4221	each	$177.00

The unit costs shown include labor, overhead, and profit. Payment based on units completed. No partial payments.

All unit costs are negotiated costs and are not subject to change or adjustment.

Unit Cost Payment Basis: If unit costs by year are included, unit costs billed should correspond to the fiscal or calendar year, if applicable, in which the work was done.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E- FEE SCHEDULE

UNIT COST PAYMENT BASIS

SUBPROVIDER NAME: RODS Surveying, Inc.

SERVICES TO BE PROVIDED	[redacted]	UNIT	COST
1 - Person Survey Crew (GPS and Robotic Total Stations included in indirect cost rate. Mileage not included.)	[redacted]	hour	$95.00
2 - Person Survey Crew (GPS and Robotic Total Stations included in indirect cost rate. Mileage not included.)	[redacted]	hour	$140.00
3 - Person Survey Crew (GPS and Robotic Total Stations included in indirect cost rate. Mileage not included.)	[redacted]	hour	$165.00
4 - Person Survey Crew (GPS and Robotic Total Stations included in indirect cost rate. Mileage not included.)	[redacted]	hour	$200.00

The unit costs shown include labor, overhead, and profit. Payment based on units completed. No partial payments.

All unit costs are negotiated costs and are not subject to change or adjustment.

Unit Cost Payment Basis: If unit costs by year are included, unit costs billed should correspond to the fiscal or calendar year, if applicable, in which the work was done.

Note: Any direct labor, unit cost, or other direct expense classification included in the contract, but not in a work authorization, is not eligible for payment under that work authorization.

ATTACHMENT E- FEE SCHEDULE

OTHER DIRECT EXPENSES

RATES SHOWN APPLY TO PRIME PROVIDER AND ALL SUBPROVIDERS

SERVICES TO BE PROVIDED	UNIT	FIXED COST	MAXIMUM COST
Lodging/Hotel - Taxes and Fees	day/person		$25.00
Lodging/Hotel (Taxes/fees not included)	day/person		Current State Rate
Meals (Excluding alcohol & tips) (Overnight stay required)	day/person		Current State Rate
Mileage	mile	Current State Rate	
Rental Car Fuel	day		$25.00
SUV or ATV Rental (Includes taxes and fees; Insurance costs will not be reimbursed)	day		$130.00
Rental Car Fuel	gallon		$3.75
Rental Car (Includes taxes and fees; Insurance costs will not be reimbursed)	day		$55.00
Air Travel - In State - Short Notice (Coach)	Rd Trip/person		$500.00
Air Travel - In State - 2+ Wks Notice (Coach)	Rd Trip/person		$400.00
Air Travel - Out of State - 2+ Wks Notice (Coach)	Rd Trip/person		$550.00
Air Travel - Out of State - Short Notice (Coach)	Rd Trip/person		$650.00
Oversize, special handling or extra baggage airline fees (with advance coordination with TxDOT)	each		$100.00
Taxi/Cab fare	each/person		$30.00
Parking	day		$18.00
Toll Charges	each		$2.00
Standard Postage	letter	Current Postal Rate	
Certified Letter Return Receipt	each	Current Postal Rate	
Overnight Mail - letter size	each		Current Postal Rate
Overnight Mail - oversized box	each		$30.00
Materials and Shipping	per package		$25.00
Courier Services	each		$25.00
Photocopies B/W (11" X 17")	each	$0.20	
Photocopies B/W (8 1/2" X 11")	each	$0.10	
Photocopies Color (11" X 17")	each	$0.75	
Photocopies Color (8 1/2" X 11")	each	$0.40	
Digital Ortho Plotting	sheet	$1.50	
Plots (B/W on Bond)	per sq. ft.	$0.60	
Plots (Color on Bond)	per sq. ft.	$1.15	
Plots (Color on Photographic Paper)	per sq. ft.	$4.00	
Color Graphics on Foam Board	square foot	$5.00	
Presentation Boards 30" X 40" Color Mounted	each		$65.00
Report Printing	each		$35.00
Report Binding and tabbing	each	$5.00	
Reproduction of CD/DVD	each		$4.00
CDs	each	$1.50	
4" X 6" Digital Color Print	picture	$0.30	
Tx Parks & Wildlife Data Request Fees	each		$45.00
Hazardous Materials Database Search	per search		$325.00
Noise Meter Rental	per project		$110.00
Environmental Field Supplies (lathes, stakes, flagging, spray paint, etc.)	day		$35.00
Curator (Drawer & TX Archaeological Research Lab for artifacts & report)	per project		$1,300.00
Court Reporter	page		$6.00
Court Reporter (Public Meetings, Hearings & Transcription)	day		$500.00
Translator (English to Spanish, other language as appropriate, or Sign Language)	hour		$100.00
Custodian for Public Involvement	hour/custodian		$28.00
Sound Technician for Public Involvement	event		$250.00
Public Involvement Facility Rental (estimate)	4 hours		$750.00
Public involvement Facility Rental (estimate)	8 hours		$3,000.00
Public Involvement Facility Rental (estimate)	hour		$150.00
Public Involvement Facility Rental	event		$800.00

ATTACHMENT E- FEE SCHEDULE

OTHER DIRECT EXPENSES

RATES SHOWN APPLY TO PRIME PROVIDER AND ALL SUBPROVIDERS

SERVICES TO BE PROVIDED	UNIT	FIXED COST	MAXIMUM COST
Audio - Equipment Rental	each		$200.00
Audio - Visual Equipment Rental	event		$350.00
Public Notices - Mass Mailing (500 pieces)	per mailing		$400.00
FEMA FIS (Manual)	each		$5.00
FEMA FIS Backup Data Request	each		$350.00
FEMA Map Revision Submittal (CLOMR/LOMR) (Submittal Fee Only)	each		$5,000.00
FEMA Model/Floodplain Hardcopy	each		$250.00
Railroad - Flagger (Service provided by RR)	hour		$60.00
Railroad - Insurance in addition to STD Minimum Required (Minimum coverage of $1 Million required by RR.)	each		$1,500.00
Railroad - Permit	each		$650.00
Railroad - Safety Training (If required - Heavy Rail Safety Training Certificate, includes classroom training and employee certification card.)	Per Person		$250.00
Traffic Control Services, Arrow Boards and Attenuator trucks - Large Project (Includes labor, equipment and fuel)	day		$2,500.00
Traffic Control Services, Arrow Boards and Attenuator trucks - Medium Project (Includes labor, equipment and fuel)	day		$2,000.00
Traffic Control Services, Arrow Boards and Attenuator trucks - Small Project (Includes labor, equipment and fuel)	day		$1,500.00
Attenuator trucks - (Lane/Shoulder Closure) (Includes labor, equipment and fuel)	day		$425.00
Attenuator trucks - (No Lane Closure) (Includes labor, equipment and fuel)	day		$250.00
Flashing Arrow Board	day		$400.00
Portable Message Board	day		$200.00
Law Enforcement/Uniform Officer (including vehicle)	hour		$75.00
Required Permit Fees (non- railroad)	each		$75.00
Boat with Motor	day		$225.00
Fathometer	day		$90.00
Backhoe Rental	day		$875.00
Map, Tapes, and Supplies	each	$3.50	
Rental Equipment - Gasoline Powered Auger	day		$60.00
Cellular Telephone & Data Plan	each/month		$60.00
Wireless Router/Server	month		$30.00
Laptop Computer/IPad and data plan	each/month		$45.00
Desktop & Microcomputer w/Plotter-each/month	sheet		$32.50
GPS Receiver (rates applied to actual time GPS units are in use)	hour		$22.50
GPS RTK (rates applied to actual time GPS units are in use)	hour	$21.00	
GPS Static (rates applied to actual time GPS units are in use)	hour	$21.00	
Map Records	sheet		$5.00
Deed Copies	sheet	$1.75	
Certified Deed Copies	sheet	$2.50	
Historical Aerial Images	unit		$100.00
Aerial Photographs (1" = 500' scale)	each		$65.00
(includes crew time, equipment, materials, rentals, & labor). Brass Marker supplied by TxDOT	each	$55.00	
Type II ROW Monument - Poured 2-3 Feet (includes One Call, crew time, equipment, materials, rentals, labor). Brass Marker supplied by TxDOT	each	$200.00	
Reprographics	per sq. ft.	$3.00	
Terrestrial Laser Scanner (rates applied to actual time scanner unit is in use)	hour	$80.00	
Ground Target (includes paint, panel material, etc.)	each	$20.00	
Ground Penetrating Radar (equipment only)	day	$126.25	
Helicopter Equipment LiDAR - Project Flight Miles (On project flight miles)	per mile		$55.00
Helicopter Equipment LiDAR - Transit Miles (including turn, maneuver miles and local airport to project)	per mile		$13.00
Fixed Wing Airborne LiDAR - Project Flight Miles (On project flight miles)	per mile	$20.00	
Fixed Wing Airborne LiDAR - Transit Miles (including turn, maneuver miles and local airport to project)	per mile	$7.00	

ATTACHMENT E- FEE SCHEDULE

OTHER DIRECT EXPENSES

RATES SHOWN APPLY TO PRIME PROVIDER AND ALL SUBPROVIDERS

SERVICES TO BE PROVIDED	UNIT	FIXED COST	MAXIMUM COST
Aerial Photography - Airborne GPS/IMU Data collection/Processing	Per Project	$2,200.00	
Aerial Photography - Project Flight Miles (On project flight miles)	Per Mile	$28.00	
Aerial Photography - Transit miles (including turn, maneuver miles and local airport to project)	Per Mile	$6.00	
Photo Lab Service - Black and White Processing (film, development, scanning)	Per Frame	$16.00	
Photo Lab Service - Color Infrared Processing (film, development, scanning)	Per Frame	$25.00	
Photo Lab Service - Color Processing (film, development, scanning)	Per Frame	$29.00	
Photo Lab Service - Digital image processing	Per Frame	$25.00	
Photo Lab Service - Enlargements, Lamination, Mounting	per sq. ft.	$5.50	
Mobilization for Helicopter Airborne LiDAR (includes Helicopter, Pilot, LiDAR Operator, Fuel and transpotation cost)	per project		$13,000.00
Moblization for Fixed Wing Aircraft LiDAR (includes pilot, aircraft,Lidar Operator,Fuel, and transpotation cost)	per project		$11,000.00

Profit not allowed on Other Direct Expenses.

For Cost Plus Fixed Fee, Specified Rate, and Unit Cost - Fixed cost items to be billed at the fixed cost rate. Documentation, such as a usage log, must be maintained for audit purposes, and may be required to be submitted as a basis for reimbursement. For items with a maximum cost, actual cost to be billed not to exceed the maximum shown. Itemized receipts must be maintained for audit purposes, and may be required to be submitted as a basis for reimbursement. **For Lump Sum -** No documentation required. Invoicing by physical percent complete includes combination of direct labor and other direct expenses.

NOTE: For Cost Plus Fixed Fee, Specified Rate, and Unit Cost - Miscellaneous other direct expenses up to $100 per unit will be reimbursed at cost if approved and documented in advance by the State's Project Manager. Miscellaneous other direct expenses of $100 per unit or more will not be reimbursed unless a supplemental agreement to the contract and work authorization (if WAs are used) has been executed in advance authorizing the miscellaneous other direct expenses. No more than $2,500 in miscellaneous other direct expenses may be approved by the State's Project Manager over the life of this contract including prime provider and subproviders. **For Lump Sum -** This statement does not apply.

Prime Provider: AECOM Technical Services Inc. Project: SH 36 PS&E, SEGMENT 10		SUBTOTALS	AECOM, Inc.	Aguirre & Fields, LP	AIA Engineers, Ltd.	Brown & Gay Engineers, Inc.	Entech Civil Engineers, Inc.	IEA, Inc.	Geotest Engineering, Inc.	RODS Surveying, Inc.	RODS Aerial Mapping, LLC	Shine & Associates, Inc.	
FC 102 (110)	Total Labor Cost	$ 74,206.60	$49,815.02	$0.00	$3,951.44	$5,589.64	$0.00	$2,395.54	$12,454.96	$0.00	$0.00	$0.00	
	Other Direct Expenses	$ -											
FC 120 (120)	Total Labor Cost	$ 27,028.34	$27,028.34	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
	Other Direct Expenses	$ -											
FC 130 (130)	Total Labor Cost	$ 257,395.38	$47,228.38	$0.00	$210,167.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
	Other Direct Expenses	$ -											
FC 160 (163) - ROW testimony	Direct Labor Cost	$ 129,157.99	$129,157.99	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
	Fixed Fee/Profit	$ 12,915.80	$12,915.80	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
	Other Direct Expense	$ 8,162.50	$8,162.50	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
FC 145 (164)	Total Labor Cost	$ 362,793.59	$287,294.01	$23,449.68	$13,577.36	$26,309.40	$12,163.14	$0.00	$0.00	$0.00	$0.00	$0.00	
	Other Direct Expenses	$ 49,749.16	$39,476.61	$2,246.00	$5,795.00	$1,216.00	$540.00	$475.55	$0.00				
FC 160 (150)	Total Labor Cost	$ 306,056.65	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$306,056.65	$0.00	$0.00	
	Other Direct Expenses	$ 9,627.00								$9,627.00			
FC 160 (160)	Total Labor Cost	$ 772,871.84	$772,871.84	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
	Other Direct Expenses	$ -											
FC 160 (161)	Total Labor Cost	$ 975,709.14	$741,161.63	$0.00	$0.00	$0.00	$51,305.24	$183,242.27	$0.00	$0.00	$0.00	$0.00	
	Other Direct Expenses	$ -											
FC 160 (162)	Total Labor Cost	$ 153,530.00	$42,904.49	$0.00	$0.00	$0.00	$110,625.51	$0.00	$0.00	$0.00	$0.00	$0.00	
	Other Direct Expenses	$ -											
FC 160 (163)	Total Labor Cost	$ 783,397.05	$173,712.49	$268,011.47	$0.00	$251,749.91	$89,923.18	$0.00	$0.00	$0.00	$0.00	$0.00	
	Other Direct Expenses	$ -											
FC 160 (165)	Total Labor Cost	$ 347,082.98	$347,082.98	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
	Other Direct Expenses	$ -											
FC 160 (170)	Total Labor Cost	$ 60,008.19	$60,008.19	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
	Other Direct Expenses	$ -											
CPS - FC 309 (309)	Direct Labor Cost	$ 156,975.05	$112,687.69	$0.00	$14,584.01	$14,573.22	$15,130.13	$0.00	$0.00	$0.00	$0.00	$0.00	
	Fixed Fee/Profit	$ 15,697.50	$11,268.77	$0.00	$1,458.40	$1,457.32	$1,513.01	$0.00	$0.00	$0.00	$0.00	$0.00	
	Other Direct Expense	$ 8,297.50	$8,162.50	$0.00	$0.00	$0.00	$135.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Grand Totals		$ 4,510,662.26	$ 2,870,939.23	$ 293,707.15	$ 249,533.21	$ 300,895.49	$ 281,335.21	$ 186,113.36	$ 12,454.96	$ 315,683.65	$ -	$ -	
(HUB%)		29.68%		6.51%	5.53%		6.24%	4.13%	0.28%	7.00%	0.00%	0.00%	

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR HYDROLOGIST	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
FEASIBILITY STUDIES - FC 102 (110)																	
ROUTE & DESIGN STUDIES																	
DATA COLLECTION	10				16		60	24			40				150	N/A	N/A
FIELD RECONNAISSANCE	6				20		24								50	N/A	N/A
ROADWAY DESIGN CRITERIA	6		6		24		8								44	N/A	N/A
PRELIMINARY COST ESTIMATE	6				24		24				32				86	N/A	N/A
DESIGN CONCEPT CONFERENCE	6		6		24		24								60	N/A	N/A
DESIGN EXCEPTIONS, IF APPLICABLE	2				8										10		
HOURS SUB-TOTALS	36	0	12	0	116	0	140	24	0	0	72	0	0	0	400		
CONTRACT RATE PER HOUR	$213.73	$216.47	$224.69	$191.81	$145.23	$128.78	$93.16	$109.60	$97.44	$73.98	$95.90	$79.46	$69.37	$63.02			
TOTAL LABOR COSTS	$7,694.20	$0.00	$2,696.26	$0.00	$16,846.13	$0.00	$13,042.88	$2,630.50	$0.00	$0.00	$6,905.05	$0.00	$0.00	$0.00	$49,815.02		
% DISTRIBUTION OF STAFFING	9.0%	0.0%	3.0%	0.0%	29.0%	0.0%	35.0%	6.0%	0.0%	0.0%	18.0%	0.0%	0.0%	0.0%			
SUBTOTAL - FC 102 (110)															**$49,815.02**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR HYDROLOGIST	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
SOCIA/ECON/ENVIRON STUDIES - FC 120 (120)																	
ENVIRONMENTAL STUDIES & PUBLIC INVOLVEMENT																	
INFORMAL MEETINGS WITH PUBLIC, OTHER AGENCIES, STAKEHOLDERS (3 mtgs)	10			20			24							4	58	N/A	N/A
REVIEW OF ENVIRONMENTAL STUDY	1		4	20			10							1	36		
EPIC SHEETS	1					8	8							1	18	N/A	N/A
ENVIRONMENTAL EXHIBITS	6			8		24	24				24			2	88	N/A	N/A
HOURS SUB-TOTALS	18	0	4	48	0	32	66	0	0	0	24	0	0	8	200	0	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$213.73	$216.47	$224.69	$191.81	$145.23	$128.78	$93.16	$109.60	$97.44	$73.98	$95.90	$79.46	$69.37	$63.02			
TOTAL LABOR COSTS	$3,847.10	$0.00	$898.75	$9,206.74	$0.00	$4,121.11	$6,148.78	$0.00	$0.00	$0.00	$2,301.68	$0.00	$0.00	$504.18	$27,028.34		
% DISTRIBUTION OF STAFFING	9.00%	0.00%	2.00%	24.00%	0.00%	16.00%	33.00%	0.00%	0.00%	0.00%	12.00%	0.00%	0.00%	4.00%			
SUBTOTAL - FC 120 (120)															**$27,028.34**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR HYDROLOGIST	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
RIGHT OF WAY DATA - FC 130 (130)																	
RIGHT OF WAY DATA																	
REVIEW ROW MAPPING	2		2	2	24		16								46	N/A	N/A
HOUSTON DISTRICT UTILITY COOPERATIVE PROCESS	6			4	28		40				24				102	N/A	N/A
ACCESS MANAGEMENT (EVALUATION & COORDINATION)	6			4	28		48				72				158	N/A	N/A
MEETINGS WITH THE PUBLIC (EXHIBITS/ 2 MTGS)	6			4	12		40				40				102	N/A	N/A
HOURS SUB-TOTALS	20	0	2	14	92	0	144	0	0	0	136	0	0	0	408	0	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$213.73	$216.47	$224.69	$191.81	$145.23	$128.78	$93.16	$109.60	$97.44	$73.98	$95.90	$79.46	$69.37	$63.02			
TOTAL LABOR COSTS	$4,274.56	$0.00	$449.38	$2,685.30	$13,360.73	$0.00	$13,415.53	$0.00	$0.00	$0.00	$13,042.88	$0.00	$0.00	$0.00	$47,228.38		
% DISTRIBUTION OF STAFFING	4.90%	0.00%	0.49%	3.43%	22.55%	0.00%	35.29%	0.00%	0.00%	0.00%	33.33%	0.00%	0.00%	0.00%			
SUBTOTAL - FC 130 (130)															**$47,228.38**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR HYDROLOGIST	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
MANAGING CONTRACTED/DONATED PE - FC 145 (164)																	
MANAGING CONTRACTED PER SERVICES & SURVEY CONTRACTS																	
PROJECT MANAGEMENT & COORDINATION WITH TXDOT (18 month schedule assumed)	72		28		72									18	190		
ATTEND MEETINGS WITH TXDOT (18 MEETINGS ASSUMED)	72		28	28	72										200		
PREPARE MEETING MINUTES (18 MEETING MINUTES ASSUMED)	24				36									18	78		
PREPARE MONTHLY PROGRESS REPORTS (18 REPORTS ASSUMED)	24													18	42		
DEVELOP AND MAINTAIN PROJECT SCHEDULE	36				96										132		
PERFORM QUALITY ASSURANCE ON DELIVERABLES	32	72		380											484		
COMPILE AND PROVIDE ELECTRONIC DELIVERABLES ON CD-ROM	2				32		40				40				114		
PROJECT MANAGEMENT & COORDINATION WITH SUBCONSULTANT- AnF	36				16									12	64	N/A	N/A
PROJECT MANAGEMENT & COORDINATION WITH SUBCONSULTANT - AIA	36				16									12	64	N/A	N/A
PROJECT MANAGEMENT & COORDINATION WITH SUBCONSULTANT - BGE	36				16									12	64	N/A	N/A
PROJECT MANAGEMENT & COORDINATION WITH SUBCONSULTANT - Entech	40				16									12	68	N/A	N/A
PROJECT MANAGEMENT & COORDINATION WITH SUBCONSULTANT - IEA	16		24		10									12	62	N/A	N/A
PROJECT MANAGEMENT & COORDINATION WITH SUBCONSULTANT - Geotest	8				8									4	20	N/A	N/A
PROJECT MANAGEMENT & COORDINATION WITH SUBCONSULTANT - RODS	32				24									12	68	N/A	N/A
HOURS SUB-TOTALS	466	72	80	408	414	0	40	0	0	0	40	0	0	130	1650		
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$213.73	$216.47	$224.69	$191.81	$145.23	$128.78	$93.16	$109.60	$97.44	$73.98	$95.90	$79.46	$69.37	$63.02			
TOTAL LABOR COSTS	$99,597.15	$15,585.69	$17,975.06	$78,257.26	$60,123.27	$0.00	$3,726.54	$0.00	$0.00	$0.00	$3,836.14	$0.00	$0.00	$8,192.90	$287,294.01		
% DISTRIBUTION OF STAFFING	28.24%	4.36%	4.85%	24.73%	25.09%	0.00%	2.42%	0.00%	0.00%	0.00%	2.42%	0.00%	0.00%	7.88%			
SUBTOTAL - FC 145 (164)															**$287,294.01**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR HYDROLOGIST	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
ROADWAY DESIGN - FC 160 (160)																	
ROADWAY DESIGN CONTROLS																	
REVIEW SCHEMATIC	2			2	16										20	N/A	N/A
REFINE SCHEMATIC	2			2	32		80				76				192	N/A	N/A
REVIEW AND ANALYZE PEEDESTRIAN AND BICYCLE FACILITY NEEDS	8			2	32	38	40				76				196	N/A	N/A
ROADWAY DESIGN:																	
TITLE SHEET/INDEX SHEET (5 SHEETS)	6			4	22		22				22	18			94	5	19
PROPOSED TYPICAL SECTIONS (8 SHEETS)	8			8	38	22	38				40	40			194	8	24
EXISTING TYPICAL SECTIONS (3 SHEETS)	2			8	9		19				19				57	3	19
PAVEMENT REMOVAL PLANS (34 SHEETS)	38			36	150	152	152	40			38	38			644	34	19
HORIZONTAL ALIGNMENT DATA (10 SHEETS)	8			14	76	50	76								224	10	22
ROADWAY PLAN AND PROFILE (SCALE: H 1"=100' V 1"=10')(66 SHEETS)	150	48		56	342	438	360	190	232		256	142			2214	66	34
CROSS STREET ROADWAY PLAN AND PROFILE (SCALE: H 1"=100' V 1"=10) (28 SHEETS)	53	24		26	232	152	304				170				961	28	34
DRIVEWAY SUMMARY SHEETS (4 SHEETS)	18			10	62		66	11							167	4	42
INTERSECTION LAYOUTS & GRADING (UPTO 4 INTERSECTIONS)	16			20	76		95	11							218	4	55
MISCELLANEOUS ROADWAY DETAILS(3 SHEETS)	8			2	40		27				38				115	3	38
EARTHWORK CROSS SECTIONS (290 SHEETS)	47			40	112	79	170		380						828	290	3
IDENTIFY AND INCORPORATE APPLICABLE ROADWAY STANDARDS	16			12	76		72								176		
HOURS SUB-TOTALS	382	72	0	242	1315	931	1521	252	612	0	735	238	0	0	6300	455	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$213.73	$216.47	$224.69	$191.81	$145.23	$128.78	$93.16	$109.60	$97.44	$73.98	$95.90	$79.46	$69.37	$63.02			
TOTAL LABOR COSTS	$81,644.02	$15,585.69	$0.00	$46,417.29	$190,971.27	$119,898.56	$141,701.53	$27,620.21	$59,632.03	$0.00	$70,489.07	$18,912.17	$0.00	$0.00	$772,871.84		
% DISTRIBUTION OF STAFFING	6.06%	1.14%	0.00%	3.84%	20.87%	14.78%	24.14%	4.00%	9.71%	0.00%	11.67%	3.78%	0.00%	0.00%			
SUBTOTAL - FC 160 (160)															**$772,871.84**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR HYDROLOGIST	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
ROADWAY DESIGN - FC 160 (161)																	
DRAINAGE																	
HYDROLOGIC STUDIES (13+ MILES PLUS CONTRIBUTING AREA TO 15 OUTFALLS)																	
DELINEATE EXISTING DRAINAGE AREAS	2		15	40	40	40	120	8		40		40			345	N/A	N/A
DETERMINE EXISTING HYDROLOGIC PARAMETERS	1		15	32	32		60	8		30		30			208	N/A	N/A
CALCULATE EXISTING DISCHARGES	1	1	8	12	24	16	40								102	N/A	N/A
FEMA FLOWS COMPARISON				4	8	4									16	N/A	N/A
DELINEATE PROPOSED DRAINAGE AREAS	2		8	24	32	32	80	4		20		20			222	N/A	N/A
DETERMINE PROPOSED HYDROLOGIC PARAMETERS	2		10	20	16		32	4		16		16			116	N/A	N/A
CALCULATED PROPOSED DISCHARGES	2	2	8	12	24	16	40								104	N/A	N/A
HYDRAULIC STUDIES - CROSS CULVERTS (14 CROSS DRAINAGE STRUCTURES)																	
ASSIGN HYDROLOGY				2	4		8								14	N/A	N/A
DEVELOP HEC-RAS MODELS FOR 13 EXISTING CROSSINGS	2	1	20	48	30	32	80								213	N/A	N/A
DETERMINE EXISTING WATER SURFACE ELEVATIONS	1		2	8	12		24								47	N/A	N/A
ANALYZE CROSSINGS AND RECOMMEND IMPROVEMENTS	2	2	16	48	32	32	80				20	24			256	N/A	N/A
QUANTIFY IMPACTS AND RECOMMEND MITIGATION	2	2	4	32	32	16	40				12	24			164	N/A	N/A
HYDRAULIC STUDIES - BRIDGES (VARNER CREEK)																	
ASSIGN HYDROLOGY	1		1	1			1				1				5	N/A	N/A
DEVELOP HEC-RAS MODEL FOR EXISTING BRIDGE	2		2	4			4				2				14	N/A	N/A
DETERMINE EXISTING WATER SURFACE ELEVATIONS	2		2	2			2				2				10	N/A	N/A
ANALYZE CROSSING AND RECOMMEND IMPROVEMENTS	2		2	4			4				2				14	N/A	N/A
QUANTIFY IMPACTS AND RECOMMEND MITIGATION	2		2	4			4				2				14	N/A	N/A
COMPUTE FLOODPLAIN STORAGE VOLUMES AND RECOMMEND MITIGATION	2		2	4			4				2				14	N/A	N/A
HYDRAULIC STUDIES - DITCHES / STORM DRAINS (13+ MILES AND 15 OUTFALLS)																	
ASSIGN HYDROLOGY				4	16		24								44	N/A	N/A
DEVELOP XP-SWMM MODEL FOR 14 EXISTING OUTFALL SYSTEMS	2	1	12	40	20	20	120				24				239	N/A	N/A
DETERMINE EXISTING TAILWATER CONDITIONS				2		4	4								10	N/A	N/A
ANALYZE EXISTING DRAINAGE SYSTEMS AND DETERMINE HGL	2		8	24	16	16	40				24				130	N/A	N/A
DEVELOP XP-SWMM MODEL FOR 14 PROPOSED OUTFALL SYSTEMS	2	1	24	60	40	40	160				16				343	N/A	N/A
DETERMINE PROPOSED TAILWATER CONDITIONS				2		4	4								10	N/A	N/A
ANALYZE / DESIGN PROPOSED DRAINAGE SYSTEMS AND DETERMINE HGL	2		8	40	32	32	60		40		24				238	N/A	N/A
OPTIMIZE DRAINAGE SYSTEMS TO MITIGATE IMPACTS (IN-LINE AND OFF-LINE)	2	2	16	40	24	24	80		24		16				228	N/A	N/A
CONDUCT EXTREME EVENT SHEET FLOW ANALYSIS	2		4	16		24	40		12		16				114	N/A	N/A

DRAINAGE REPORT																	
PREPARE PRELIMINARY LETTER REPORT	2	1	4	16	8	8	32				8	24		4	107	N/A	N/A
PREPARE DRAFT DRAINAGE REPORT	2	1	16	40	20	20	80				40	60		8	287	N/A	N/A
PREPARE FINAL DRAINAGE REPORT	2	1	8	16	8	8	40				8	20		8	119	N/A	N/A
SCOUR ANALYSIS (VARNER CREEK)																	
PERFORM SCOUR ANALYSIS	1		1	2			2				2				8	N/A	N/A
COORDINATE FINDINGS/MITIGATION WITH THE STATE	1		1	2			2				2				8	N/A	N/A
PREPARE SEPARATE SCOUR REPORT	1		1	2			2				2				8	N/A	N/A
CULVERT AND DITCH / STORM DRAIN DESIGN																	
CULVERT LAYOUTS AND SECTIONS (14 STRUCTURES)	2		4	2			4				8				20	14	1
DRAINAGE AREA MAPS (OVERALL - 4 SHEETS)	4	2	8	24		40					16	72			166	4	42
DRAINAGE AREA MAPS (ROADWAY - 18 SHEETS)	4	2	10	32		12	60				32	320			472	18	26
DRAINAGE COMPUTATION SHEETS (8 SHEETS)	4	0	8	40	10	10	80				8	80			240	8	30
STORM SEWER PLAN AND PROFILE (ASSUME 16 SHEETS)	2		4	2			4					8			20	16	1
STORM SEWER LATERALS (ASSUME 12 SHEETS)	2		4	2			4					8			20	12	2
DITCH CROSSING PLAN AND PROFILE (VARNER CREEK - 4 SHEETS)	2		4	19	16		24				18	64			147	4	37
STANDARD DETAILS (ASSUME 16 SHEETS)	2			4		16							32		54	16	3
NON-STANDARD DETAILS (ASSUME NO MORE THAN 8 SHEETS)	2		12	32	12		40				16	150			264	8	33
OUTLET PROTECTION DETAILS (ASSUME NO MORE THAN 10 SHEETS)	2		12	40		24	80				40	200			398	10	40
DRAINAGE QUANTITIES (ASSUME NO MORE THAN 12 SHEETS)	4		4	18		18	64				18		138		264	12	22
HYDRAULIC DATA SHEET (VARNER CREEK)	1		1								2				4	1	4
HYDRAULIC DATA SHEET (BRIDGE CLASS CULVERT NO 9)	1		1	4		12					2	16			36	1	36
TEMPORARY DRAINAGE FACILITIES																	
TEMPORARY DRAINAGE FACILITIES SHOWN ON TCP SHEETS																	
LAYOUT, STRUCTURAL DESIGN, AND DETAILING OF DRAINAGE FEATURES																	
BRIDGE DECK DRAINAGE SYSTEM (2 SHEETS)	2		4	16		4	24				4	32			86	2	43
DETENTION POND LAYOUTS (ASSUME 1 BASIN AT VARNER CREEK - 4 SHEETS)	4		8	28	8		38				12	86			184	4	46
FLOODPLAIN CUT AND FILL																	
FLOODPLAIN CUT AND FILL ANALYSIS AND MITIGATION (VARNER CREEK)	2		4	8	4	4	16		16						54	N/A	N/A
HOURS SUB-TOTALS	89	19	308	878	520	528	1,751	24	92	106	401	1,294	170	20	6,200	130	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$213.73	$216.47	$224.69	$191.81	$145.23	$128.78	$93.16	$109.60	$97.44	$73.98	$95.90	$79.46	$69.37	$63.02			
TOTAL LABOR COSTS	$19,021.77	$4,112.89	$69,203.97	$168,406.55	$75,517.16	$67,998.32	$163,129.11	$2,630.50	$8,964.29	$7,842.17	$38,457.30	$102,824.99	$11,792.16	$1,260.45	$741,161.63		
% DISTRIBUTION OF STAFFING	1.44%	0.31%	4.97%	14.16%	8.39%	8.52%	28.24%	0.39%	1.48%	1.71%	6.47%	20.87%	2.74%	0.32%			
SUBTOTAL - FC 160 (161)															**$741,161.63**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR HYDROLOGIST	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
ROADWAY DESIGN - FC 160 (162)																	
SIGNING, PVMT. MARKING, & SIGNAL																	
TRAFFIC WARRANT STUDIES EXCLUDES TRAFFIC COUNTS (16 LOCATIONS - CR 11, FM 1462, CR 264N, WOODWARD, MULCAHY, CR 15, CR 18, CR 20, CR 19, CR 21, CR 485, CR 5/CR 23, CR 828, CR 483/CR 4, CR 467, CR 818/CR 837)																	
COORDINATE WITH TXDOT FOR TRAFFIC DATA						2									2		
REVIEW/DEVLOP EXISTING TMC FOR WARRANT STUDY				2		2									4		
DEVELOP FUTURE YEAR TMC FOR WARRANT STUDY				2		8									10		
DEVELOP BASE MODEL FOR WARRANT ANALYSIS						2									2		
PERFORM EXISTING CONDITION WARRANT ANALYSIS				4	28										32		
PERFORM FUTURE CONDITION WARRANT ANALYSIS				4	28										32		
SUMMARIZE WARRANT ANALYSIS RESULTS	2			6	28		20								56		
TRAFFIC SIGNALS (MODIFICATION AT FM 1462)																	
EXISTING CONDITION DIAGRAM				2	12		18				8				40	1	
PROPOSED SIGNAL DESIGN	4			12	24	40	16				8				104	2	
SUMMARY OF QUATITIES				2	4	16	8				8				38	1	
HOURS SUB-TOTALS	6	0	0	34	124	70	62	0	0	0	24	0	0	0	320	4	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$213.73	$216.47	$224.69	$191.81	$145.23	$128.78	$93.16	$109.60	$97.44	$73.98	$95.90	$79.46	$69.37	$63.02			
TOTAL LABOR COSTS	$1,282.37	$0.00	$0.00	$6,521.44	$18,007.94	$9,014.93	$5,776.13	$0.00	$0.00	$0.00	$2,301.68	$0.00	$0.00	$0.00	$42,904.49		
% DISTRIBUTION OF STAFFING	1.88%	0.00%	0.00%	10.63%	38.75%	21.88%	19.38%	0.00%	0.00%	0.00%	7.50%	0.00%	0.00%	0.00%			
SUBTOTAL - FC 160 (162)															**$42,904.49**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR HYDROLOGIST	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
ROADWAY DESIGN - FC 160 (163)																	
MISCELLANEOUS (ROADWAY)																	
TRAFFIC SIGNALS PLANS (TEMPORARY) (FM 1462 @ SH 36)																	
TEMPORARY SIGNAL DESIGN				10	14	60	12				40				136		
VALUE ENGINEERING (VE)																	
ATTEND VE STUDY	8				8										16		
QUANTITIES, SPECIFICATIONS & ESTIMATE:																	
ROADWAY QUANTITY SHEETS	18			20	160		140								338		
COMPUTE & TABULATE REMOVAL QUANTITIES	6			8	16		32								62	N/A	N/A
SUMMARY SHEETS FOR MISCELLANEOUS QUANTITIES, ETC.	6			8	28		36								78		
GENERAL NOTES, SPECIFICATIONS AND PROVISIONS	18			20	40		36							20	134	N/A	N/A
CONSTRUCTION TIME DETERMINATION (PRIMAVERA)	36			40	80									40	196	N/A	N/A
CONSTRUCTION COST EST. (30, 60, 90, 95 & FINAL) WITH VARIANCE REPORT	18			20	40		20								98	N/A	N/A
MISCELLANEOUS DRAFTING/STANDARDS	10			12	12		40		40						114		
PREPARE 30% SUBMITTAL					4	8		4			8				24		
PREPARE 60% SUBMITTAL					4	12		4			8				28		
PREPARE 90% SUBMITTAL					4	12		4			8				28		
PREPARE 95% SUBMITTAL					4	4		4			8				20		
PREPARE 100% SUBMITTAL					4	12		4			8				28		
PERMIT REVIEW FOR DRIVEWAYS, RDWY TIE-INS OR MODS WITHIN AREA															0	N/A	N/A
None																	
	120	0	0	138	418	108	316	20	40	0	80	0	0	60	1300	0	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$213.73	$216.47	$224.69	$191.81	$145.23	$128.78	$93.16	$109.60	$97.44	$73.98	$95.90	$79.46	$69.37	$63.02			
TOTAL LABOR COSTS	$25,647.34	$0.00	$0.00	$26,469.37	$60,704.18	$13,908.75	$29,439.63	$2,192.08	$3,897.52	$0.00	$7,672.28	$0.00	$0.00	$3,781.34	$173,712.49		
% DISTRIBUTION OF STAFFING	9.23%	0.00%	0.00%	10.62%	32.15%	8.31%	24.31%	1.54%	3.08%	0.00%	6.15%	0.00%	0.00%	4.62%			
SUBTOTAL - FC 160 (163)															**$173,712.49**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR HYDROLOGIST	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
TRANSPORTATION MANAGEMENT SYSTEM - FC 160 (165)																	
INTELLIGENT TRANSPORT SYSTEM DESIGN																	
ITS DESIGN:																	
MEETINGS/COORDINATION	38			38											76		
IDENTIFY INTITAL DEVICE LOCATIONS	4			40		40									84		
DEVICE LOCATIONS CONFIRMATION WITH TXDOT	4			16		16									36		
ITS LAYOUT SHEET (5 SHEETS)	2			8		8					16				34	5	6.80
SYSTEM BLOCK DIAGRAM (2 SHEETS)	2			8		8	8				16				42	2	21.00
ITS PLAN (SCALE: H 1"=100' V 1"=10') (66 SHEETS)	4			200	200	200					320				924	66	14.00
DMS STRUCTURE SHEETS (16 SHEETS)	4			128	200						200				532	16	33.25
CCTV DETAIL SHEETS (4 SHEETS)	4			24		24	24				32				108	4	27.00
VEHICLE DETECTION DETAIL SHEETS (3 SHEETS)	4			16		24	24				24				92	3	30.67
COMMUNICATION HUB DETAILS (3 SHEETS)	4			24		16					24				68	3	22.67
COMMUNICATION FIBER OPTIC PLANT (25 SHEETS)	4			120		160					120				404	25	16.16
MISCELLANEOUS ITS DETAILS (3 SHEETS)	2			24		24	24				24				98	3	
															0		
															0		
HOURS SUB-TOTALS	76	0	0	646	400	520	80	0	0	0	776	0	0	0	2498	127	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$213.73	$216.47	$224.69	$191.81	$145.23	$128.78	$93.16	$109.60	$97.44	$73.98	$95.90	$79.46	$69.37	$63.02			
TOTAL LABOR COSTS	$16,243.31	$0.00	$0.00	$123,907.32	$58,090.12	$66,968.04	$7,453.07	$0.00	$0.00	$0.00	$74,421.12	$0.00	$0.00	$0.00	$347,082.98		
% DISTRIBUTION OF STAFFING	3.04%	0.00%	0.00%	25.86%	16.01%	20.82%	3.20%	0.00%	0.00%	0.00%	31.06%	0.00%	0.00%	0.00%			
SUBTOTAL - FC 160 (165)															**$347,082.98**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR HYDROLOGIST	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
BRIDGE DESIGN - FC 160 (170)																	
BRIDGE DESIGN																	
BRIDGE LAYOUTS (H: 1"=20' and V:1"=20') (INCLUDE TXDOT COORD)	4	2		6	16	20	4	12			20				84	2	42
SUMMARY OF BRIDGE QUANTITIES/BRG SEAT ELEVATIONS	2			2	2	8	12	6			6				38	2	19
ABUTMENT DETAILS	4			2	2	22	44	16			32				122	6	20
INTERIOR BENT DETAILS	4			2	2	14	24	10			28				84	2	42
FRAMING PLAN (INCLUDE BGS)	4			2	2	24	16	4			16				68	2	34
SLAB PLAN	4			2	2	12	20	8			20				68	2	34
IGND	2				2	6	14	1			3				28	1	28
SOIL BORING SHEETS (INCLUDE GEOTECH COORD)	2				1	1		4			10				18	16	1
STANDARD DETAILS					1		1	2			4				8	26	0
HOURS SUB-TOTALS	26	2	0	16	30	107	135	63	0	0	139	0	0	0	518	59	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$213.73	$216.47	$224.69	$191.81	$145.23	$128.78	$93.16	$109.60	$97.44	$73.98	$95.90	$79.46	$69.37	$63.02			
TOTAL LABOR COSTS	$5,556.92	$432.94	$0.00	$3,068.91	$4,356.76	$13,779.96	$12,577.06	$6,905.05	$0.00	$0.00	$13,330.59	$0.00	$0.00	$0.00	$60,008.19		
	5.02%	0.39%	0.00%	3.09%	5.79%	20.66%	26.06%	12.16%	0.00%	0.00%	26.83%	0.00%	0.00%	0.00%			
SUBTOTAL - FC 160 (170)															**$60,008.19**		

DESCRIPTION														TOTAL MH BY FC	TOTAL COSTS BY FC
FEASIBILITY STUDIES - FC 102 (110)														400	$49,815.02
SOCIAL/ECON/ENVIRON STUDIES - FC 120 (120)														200	$27,028.34
RIGHT OF WAY DATA - FC 130 (130)														408	$47,228.38
MANAGING CONTRACTED/DONATED PE - FC 145 (164)														1650	$287,294.01
ROADWAY DESIGN - FC 160 (160)														6,300	$772,871.84
ROADWAY DESIGN - FC 160 (161)														6,200	$741,161.63
ROADWAY DESIGN - FC 160 (162)														320	$42,904.49
ROADWAY DESIGN - FC 160 (163)														1300	$173,712.49
ROADWAY DESIGN - FC 160 (165)														2498	$347,082.98
ROADWAY DESIGN - FC 160 (170)														518	$60,008.19
SUBTOTAL LABOR EXPENSES														19794	**$2,549,107.37**
OTHER DIRECT EXPENSES	**COST/UNIT**	Quantity													
Per diem	$36.00	12													$432.00
Hotel	$85.00	24													$2,040.00
Mileage	$0.540	5904													$3,188.16
Rental Car Fuel	$25.00	12													$300.00
Rental Car (Includes taxes and fees; Insurance costs will not be reimbursed)	$55.00	24													$1,320.00
Air Travel - In State - Short Notice (Coach)	$500.00														$0.00
Air Travel - In State - 2+ Wks Notice (Coach)	$400.00	24													$9,600.00
Parking	$18.00	24													$432.00
Toll Charges	$2.00	48													$96.00
Standard Postage	$0.49	25													$12.25
Overnight Mail - oversized box	$30.00	12													$360.00
Courier Services	$25.00	12													$300.00
Photocopies B/W (11" X 17")	$0.20	56400													$11,280.00
Photocopies B/W (8 1/2" X 11")	$0.10	9000													$900.00
Photocopies Color (11" X 17")	$0.75	2000													$1,500.00
Photocopies Color (8 1/2" X 11")	$0.40	2000													$800.00
Digital Ortho Plotting	$1.50														$0.00
Plots (B/W on Bond)	$0.60	612													$367.20
Plots (Color on Bond)	$1.15	960													$1,104.00
Presentation Boards 30" X 40" Color Mounted	$65.00	6													$390.00
Report Printing	$35.00	20													$700.00
Report Binding and tabbing	$5.00	20													$100.00
Reproduction of CD/DVD	$4.00	10													$40.00
CDs	$1.50	10													$15.00
Public involvement Facility Rental (estimate)	$3,000.00	1													$3,000.00
Audio - Equipment Rental	$200.00	1													$200.00
Audio - Visual Equipment Rental	$350.00	1													$350.00
Public Notices - Mass Mailing (500 pieces)	$400.00	1													$400.00
FEMA FIS Backup Data Request	$350.00														$0.00
FEMA Model/Floodplain Hardcopy	$250.00	1													$250.00
SUBTOTAL DIRECT EXPENSES															**$39,476.61**

SUMMARY	
TOTAL COSTS FOR PRIME ONLY	$2,549,107.37
NON-SALARY (OTHER DIRECT EXPENSES) FOR PRIME ONLY	$39,476.61
SUBCONTRACTS (includes labor costs and direct expenses)	
GRAND TOTAL	$2,588,583.98

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
PROJECT MANAGEMENT - FC 145 (164)															
													0	N/A	N/A
MONTHLY PROGRESS REPORT AND INVOICE	13			12								10	35	N/A	N/A
COORDINATION WITH PRIME CONSULTANT	13			12		12	23						60	N/A	N/A
PROJECT MANAGEMENT (4HR/M X 12 M)												12	12	N/A	N/A
ATTEND MEETINGS	20			20									40	N/A	N/A
HOURS SUB-TOTALS	46	0	0	44	0	12	23	0	0	0	0	22	147		
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$226.01	$246.68	$207.17	$166.36	$131.84	$100.45	$125.56	$103.59	$113.00	$87.89	$79.46	$74.55			
TOTAL LABOR COSTS	$10,396.46	$0.00	$0.00	$7,319.84	$0.00	$1,205.40	$2,887.88	$0.00	$0.00	$0.00	$0.00	$1,640.10	$23,449.68		
% DISTRIBUTION OF STAFFING	31.29%	0.00%	0.00%	29.93%	0.00%	8.16%	15.65%	0.00%	0.00%	0.00%	0.00%	14.97%			
SUBTOTAL - FC 145 (164)													**$23,449.68**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
MISCELLANEOUS (ROADWAY) - FC 160 (163)															
TRAFFIC CONTROL PLAN, DETOURS & SEQUENCE OF CONSTRUCTION:															
TCP PHASING LAYOUT (1:100, DBL Banked)	20		50	52	64	142	66	130	60	140	265		989	46	22
TCP CONSTRUCTION SEQUENCEING LAYOUT (1:400)	4		4	4	10	20	10	20	16	32	64		184	15	12
TCP TYPICAL SECTIONS (NTS)	4		4	4	10	16	14	20	10	20	36		138	7	20
TCP SEQUENCE OF CONSTRUCTION / CONSTRUCTION PHASE NARRATIVE	2		2	4	4	6	6	8	2	2	4		40		#DIV/0!
ADVANCE SIGNING LAYOUTS (NTS)													0		#DIV/0!
TCP INTERSECTION LAYOUTS (1:50)	2		2	4	6	8	6	8	6	12	18		72	4	18
TCP DETAIL SHEETS (driveway/minor intersections/temp drainage/culverts)(NTS)	2		2	4	6	8	6	6	3	6	12		55	3	18
TCP STANDARDS	2		2	4	4	8	6	8	4	8	16		62	35	2
TRAFFIC CONTROL WORKSHOP (attendance and prep)	6			4		8	8	8				8	42		
TEMPORARY DRAINAGE			2	2	4	6	6	8	4	8	10		50		
TCP SIGNING, STRIPING AND PAVEMENT MARKINGS			2	4	6	8	6	8	4	10	22		70		
EXHIBIT SUPPORT (UPTP 6 EXHIBITS)	2		4	4	8	16	8	16	6	10	20		94	6	16
ROW AND EASEMENT EVALUATIONS	2		2	4		6	8		12				34		
POSITIVE BARRIER EVALUATIONS AND DESIGN	2		2	4	6	8	8	8	4	6	8		56		
QUANTITIES, SPECIFICATIONS & ESTIMATE:															
TCP QUANTITY SHEETS	2		4	4	8	10	8	10	6	10	20		82	8	10
COMPUTE & TABULATE TCP QUANTITIES	4		4	6	6	12	8	12	4	8	16		80		
GENERAL NOTES, SPECIFICATIONS AND PROVISIONS	2		4	6	6	8	6	8					40		
CONSTRUCTION COST EST. (30, 60, 90, 95 & FINAL)			4	8	7	7	5	8					39		
MISCELLANEOUS DRAFTING (ROLL PLOTS)													0		
QAQC REVIEW AND ADDRESS COMMENTS (30, 60, 90, 95 & FINAL)	33	33		33			33		33			33	198	131	2
	89	33	94	155	155	297	218	286	174	272	511	41	2325	255	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$226.01	$246.68	$207.17	$166.36	$131.84	$100.45	$125.56	$103.59	$113.00	$87.89	$79.46	$74.55			
TOTAL LABOR COSTS	$20,114.89	$8,140.44	$19,473.98	$25,785.80	$20,435.20	$29,833.65	$27,372.08	$29,626.74	$19,662.00	$23,906.08	$40,604.06	$3,056.55	$268,011.47		
% DISTRIBUTION OF STAFFING	3.83%	1.42%	4.04%	6.67%	6.67%	12.77%	9.38%	12.30%	7.48%	11.70%	21.98%	1.76%			
SUBTOTAL - FC 160 (163)													**$268,011.47**		

DESCRIPTION												TOTAL MH BY FC	TOTAL COSTS BY FC
FEASIBILITY STUDIES - FC 102 (110)												0	$0.00
SOCIAL/ECON/ENVIRON STUDIES - FC 120 (120)												0	$0.00
RIGHT OF WAY DATA - FC 130 (130)												0	$0.00
PROJECT MANAGEMENT - FC 145 (164)												147	$23,449.68
ROADWAY DESIGN - FC 160 (160)												0	$0.00

ROADWAY DESIGN - FC 161 (161)												0	$0.00
ROADWAY DESIGN - FC 162 (162)												0	$0.00
ROADWAY DESIGN - FC 163 (163)												2325	$268,011.47
ROADWAY DESIGN - FC 160 (165)												0	$0.00
ROADWAY DESIGN - FC 170 (170)												0	$0.00
SUBTOTAL LABOR EXPENSES												2472	**$291,461.15**
OTHER DIRECT EXPENSES	**COST/UNIT**	**# OF UNITS**	**UNIT**										
Mileage (# of miles) (current state rate) (4 site visits 3 meeting)	$0.540	300	mile										$162.00
Meals (Travel) (4 site visits 3 meetings 2 personnel)	$40.00	7	day/person										$280.00
Hotel	$85.00	2	day/person										$170.00
Overnight Mail - Letter Size	$25.00	4	each										$100.00
Overnight Mail - Oversized Box	$30.00	4	each										$120.00
Courier Services	$25.00	4	each										$100.00
Photocopies B/W (8.5"x11")	$0.10	400	each										$40.00
Photocopies B/W (11"x17")	$0.20	5400	each										$1,080.00
Plots (B/W on Bond) (32SF x 2 copies x 2 submittals)	$0.50	128	square foot										$64.00
Plots (Color on Bond) (32SF x 2 copies x 2 submittals)	$1.00	128	square foot										$128.00
Charge to Reproduction of CD/DVD	$1.00	2	each										$2.00
SUBTOTAL DIRECT EXPENSES													**$2,246.00**

SUMMARY	
TOTAL COSTS	$291,461.15
NON-SALARY (OTHER DIRECT EXPENSES)	$2,246.00
GRAND TOTAL	$293,707.15

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	SENIOR CADD OPERATOR	CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
FEASIBILITY STUDIES - FC 102 (110)													
ROUTE & DESIGN STUDIES													
DATA COLLECTION & FIELD RECONNAISSANCE	2		12		20						34	N/A	N/A
HOURS SUB-TOTALS	2	0	12	0	20	0	0	0	0	0	34		
CONTRACT RATE PER HOUR	$205.60	$221.33	$140.12	$121.11	$92.94	$103.81	$84.49	$89.60	$78.86	$62.75			
TOTAL LABOR COSTS	$411.20	$0.00	$1,681.44	$0.00	$1,858.80	$0.00	$0.00	$0.00	$0.00	$0.00	$3,951.44		
% DISTRIBUTION OF STAFFING	5.9%	0.0%	35.3%	0.0%	58.8%	0.0%	0.0%	0.0%	0.0%	0.0%			
SUBTOTAL - FC 102 (110)											**$3,951.44**		

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	SENIOR CADD OPERATOR	CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
RIGHT OF WAY DATA - FC 130 (130)													
RIGHT OF WAY DATA													
UTILITY LAYOUTS	20	16	132		200			130	380		878	69	13
UTILITY ADJUSTMENTS AND EXHIBITS (25)	12	8	50		80				160		310	25	12
UTILITY CONFLICT LIST (30, 60, 90, FINAL)	10	8	140		210						368		
HOUSTON DISTRICT UTILITY COOPERATIVE PROCESS												N/A	N/A
PREPARE FOR AND ATTEND SCHEDULED UTILITY MEETINGS	12		40		80						132	N/A	N/A
PREPARE FOR AND ATTEND ONE ON ONE UTILITY MEETINGS			40		120						160	N/A	N/A
UTILITY COORDINATION	8		48		96						152	N/A	N/A
HOURS SUB-TOTALS	62	32	450	0	786	0	0	130	540	0	2000	94	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$205.60	$221.33	$140.12	$121.11	$92.94	$103.81	$84.49	$89.60	$78.86	$62.75			
TOTAL LABOR COSTS	$12,747.20	$7,082.56	$63,054.00	$0.00	$73,050.84	$0.00	$0.00	$11,648.00	$42,584.40	$0.00	$210,167.00		
% DISTRIBUTION OF STAFFING	3.10%	1.60%	22.50%	0.00%	39.30%	0.00%	0.00%	6.50%	27.00%	0.00%			
SUBTOTAL - FC 130 (130)											**$210,167.00**		

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	SENIOR CADD OPERATOR	CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
MANAGING CONTRACTED/DONATED PE - FC 145 (164)													
MANAGING CONTRACTED PER SERVICES & SURVEY CONTRACTS													
PROJECT MANAGEMENT & COORDINATION	24		24							12	60	N/A	N/A
PREPARE AND DISTRIBUTE MEETING MINUTES	2		24							12	38	N/A	N/A
HOURS SUB-TOTALS	26	0	48	0	0	0	0	0	0	24	98		
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$205.60	$221.33	$140.12	$121.11	$92.94	$103.81	$84.49	$89.60	$78.86	$62.75			
TOTAL LABOR COSTS	$5,345.60	$0.00	$6,725.76	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1,506.00	$13,577.36		
% DISTRIBUTION OF STAFFING	26.53%	0.00%	48.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	24.49%			
SUBTOTAL - FC 145 (164)											**$13,577.36**		

DESCRIPTION										TOTAL MH BY FC	TOTAL COSTS BY FC
FEASIBILITY STUDIES - FC 102 (110)										34	$3,951.44
RIGHT OF WAY DATA - FC 130 (130)										2000	$210,167.00
MANAGING CONTRACTED/DONATED PE - FC 145 (164)										98	$13,577.36
ROADWAY DESIGN - FC 160 (163)										0	$0.00
SUBTOTAL LABOR EXPENSES										2132	**$227,695.80**
OTHER DIRECT EXPENSES	**COST/UNIT**										
Mileage (# of miles) (current state rate)	$0.540	Mi	3000								$1,620.00
Toll Charges	$2.00	EA	75								$150.00
Certified Letter Return Receipt	$5.000	EA	50								$250.00
Overnight Mail - letter size	$0.500	EA	200								$100.00
Overnight Mail - oversized box	$32.000	EA	50								$1,600.00
Courier Services	$28.000	EA	20								$560.00
Photocopies B/W (11" X 17")	$0.200	EA	1500								$300.00
Photocopies B/W (8 1/2" X 11")	$0.100	EA	500								$50.00
Photocopies Color (11" X 17")	$0.750	EA	1500								$1,125.00
Photocopies Color (8 1/2" X 11")	$0.400	EA	100								$40.00
SUBTOTAL DIRECT EXPENSES											**$5,795.00**

SUMMARY	
TOTAL COSTS	$227,695.80
NON-SALARY (OTHER DIRECT EXPENSES)	$5,795.00
GRAND TOTAL	$233,490.80

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
FEASIBILITY STUDIES - FC 102 (110)																
ROUTE & DESIGN STUDIES																
DATA COLLECTION	2			4		16								22	N/A	N/A
FIELD RECONNAISSANCE	2			12		12								26	N/A	N/A
HOURS SUB-TOTALS	4	0	0	16	0	28	0	0	0	0	0	0	0	48		
CONTRACT RATE PER HOUR	$212.53	$227.45	$191.03	$138.93	$117.58	$89.88	$109.98	$86.11	$72.36	$92.08	$79.96	$73.27	$66.57			
TOTAL LABOR COSTS	$850.12	$0.00	$0.00	$2,222.88	$0.00	$2,516.64	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$5,589.64		
% DISTRIBUTION OF STAFFING	8.3%	0.0%	0.0%	33.3%	0.0%	58.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
SUBTOTAL - FC 102 (110)														**$5,589.64**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
MANAGING CONTRACTED/DONATED PE - FC 145 (164)																
MANAGING CONTRACTED PER SERVICES & SURVEY CONTRACTS																
PREPARE MONTHLY PROGRESS REPORTS AND INVOICE	18			18										36	N/A	N/A
MEETINGS & COORDINATION WITH AECOM	26			50		10								86	N/A	N/A
MEETINGS & COORDINATION WITH AGUIRRE & FIELDS	16			16		11								43	N/A	N/A
HOURS SUB-TOTALS	60	0	0	84	0	21	0	0	0	0	0	0	0	165		
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$212.53	$227.45	$191.03	$138.93	$117.58	$89.88	$109.98	$86.11	$72.36	$92.08	$79.96	$73.27	$66.57			
TOTAL LABOR COSTS	$12,751.80	$0.00	$0.00	$11,670.12	$0.00	$1,887.48	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$26,309.40		
% DISTRIBUTION OF STAFFING	36.36%	0.00%	0.00%	50.91%	0.00%	12.73%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
SUBTOTAL - FC 145 (164)														**$26,309.40**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
ROADWAY DESIGN - FC 160 (163)																
MISCELLANEOUS (ROADWAY)																
TRAFFIC CONTROL PLAN, DETOURS & SEQUENCE OF CONSTRUCTION:																
STATION 0+00 TO 300+00																
OVERALL PHASING LAYOUT (Scale: H 1"=400')	2			8		16	24	16						66	4	17
TCP, DETOURS AND SEQUENCE OF CONSTRUCTION	42	30	30	274	100	424	100	464						1464	49	30
TEMPORARY DRAINAGE SHOWN ON TCP SHEETS	2	4	16	20		40	32							114	N/A	N/A
ADVANCE SIGNING LAYOUTS	1			4		8		12						25	1	25
TCP DETAILS, TYPICAL SECTIONS	4	4		40		100	40	40						228	8	29
TCP STANDARDS	2			20		40								62	20	3
TCP INTERSECTION LAYOUTS (SCALE: H 1"=50')	4	8		24	16	40		40						132	4	33
COST ESTIMATE	2	1		4	16	16								39	N/A	N/A
TRAFFIC CONTROL WORKSHOP	4			8		8								20	N/A	N/A
QUANTITIES, SPECIFICATIONS & ESTIMATE:																
COMPUTE & TABULATE TCP QUANTITIES	2	1		12		24		4						43	N/A	N/A
QAQC REVIEW AND ADDRESS COMMENTS (30, 60, 90, 95 & FINAL)	10			24		24		24						82	N/A	N/A
	75	48	46	438	132	740	196	600	0	0	0	0	0	2275	86	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$212.53	$227.45	$191.03	$138.93	$117.58	$89.88	$109.98	$86.11	$72.36	$92.08	$79.96	$73.27	$66.57			
TOTAL LABOR COSTS	$15,939.75	$10,917.60	$8,787.38	$60,851.34	$15,520.56	$66,511.20	$21,556.08	$51,666.00	$0.00	$0.00	$0.00	$0.00	$0.00	$251,749.91		
% DISTRIBUTION OF STAFFING	3.30%	2.11%	2.02%	19.25%	5.80%	32.53%	8.62%	26.37%	0.00%	0.00%	0.00%	0.00%	0.00%			
SUBTOTAL - FC 160 (163)														**$251,749.91**		

DESCRIPTION														TOTAL MH BY FC	TOTAL COSTS BY FC
FEASIBILITY STUDIES - FC 102 (110)														48	$5,589.64
MANAGING CONTRACTED/DONATED PE - FC 145 (164)														165	$26,309.40
ROADWAY DESIGN - FC 160 (163)														2275	$251,749.91
SUBTOTAL LABOR EXPENSES														2488	**$283,648.95**
OTHER DIRECT EXPENSES	**COST/UNIT**														
Mileage (# of miles) (current state rate)	$0.540		400												$216.00
Photocopies B/W (8 1/2"X11")	$0.10		500												$50.00
Photocopies B/W (11"X17")	$0.20		2000												$400.00
Overnight Mail - oversized box	$30.00		5												$150.00
Plots (Color on Bond)	$1.00		400												$400.00
SUBTOTAL DIRECT EXPENSES															**$1,216.00**

SUMMARY	
TOTAL COSTS	$283,648.95
NON-SALARY (OTHER DIRECT EXPENSES)	$1,216.00
GRAND TOTAL	**$284,864.95**

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
MANAGING CONTRACTED/DONATED PE - FC 145 (164)																
MANAGING CONTRACTED PER SERVICES & SURVEY CONTRACTS																
ATTEND MEETINGS WITH AECOM/TXDOT	8		10		8		26				24			76		
PROJECT MANAGEMENT	8		8										8	24		
HOURS SUB-TOTALS	16	0	18	0	8	0	26	0	0	0	24	0	8	100	0	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$196.34	$211.24	$173.80	$141.72	$117.65	$90.91	$101.61	$88.24	$68.53	$88.24	$74.87	$68.53	$64.17			
TOTAL LABOR COSTS	$3,141.44	$0.00	$3,128.40	$0.00	$941.20	$0.00	$2,641.86	$0.00	$0.00	$0.00	$1,796.88	$0.00	$513.36	$12,163.14		
% DISTRIBUTION OF STAFFING	3.31%	0.00%	3.72%	0.00%	1.65%	0.00%	5.37%	0.00%	0.00%	0.00%	4.96%	0.00%	1.65%			
SUBTOTAL - FC 160 (161)														**$12,163.14**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
ROADWAY DESIGN - FC 160 (161)																
DRAINAGE																
CULVERT AND STORM DRAIN DESIGN																
CULVERT LAYOUTS AND SECTIONS	3		44		60		60				140			307	13	24
BRIDGE CLASS CULVERT PLAN AND PROFILE	1		4		4		4				20			33	1	33
STANDARD DETAILS	1		4		4		24				16			49	4	12
DRAINAGE DETAILS	1		4		4		24				16			49	2	25
CULVERT SUMMARY SHEET & ESTIMATES	2		16		16		8				4			46	1	46
HOURS SUB-TOTALS	8	0	72	0	88	0	120	0	0	0	196	0	0	484	21	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$196.34	$211.24	$173.80	$141.72	$117.65	$90.91	$101.61	$88.24	$68.53	$88.24	$74.87	$68.53	$64.17			
TOTAL LABOR COSTS	$1,570.72	$0.00	$12,513.60	$0.00	$10,353.20	$0.00	$12,193.20	$0.00	$0.00	$0.00	$14,674.52	$0.00	$0.00	$51,305.24		
% DISTRIBUTION OF STAFFING	1.65%	0.00%	14.88%	0.00%	18.18%	0.00%	24.79%	0.00%	0.00%	0.00%	40.50%	0.00%	0.00%			
SUBTOTAL - FC 160 (161)														**$51,305.24**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
ROADWAY DESIGN - FC 160 (162)																
SIGNING, PVMT. MARKING, & SIGNAL																
SIGNING AND PAVEMENT MARKING LAYOUTS	4		28		55		110				110			307	28	11
SMALL GUIDE SIGN DETAILS	4		7		55		110				110			286	24	12
EXISITNG SIGNING(REMOVAL) LAYOUTS	1		10		30		110				56			207	28	7
INTERSECTION SIGNING AND PAVEMENT LAYOUTS	1		8		22		55				60			146	10	15
SIGNING SUMMARIES (LARGE AND SMALL) & QUANTITIES	1		4		36		40				24			105	10	11
PAVEMENT MARKING QUANTITIES	1		4		12		16				16			49	1	49
HOURS SUB-TOTALS	12	0	61	0	210	0	441	0	0	0	376	0	0	1100	101	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$196.34	$211.24	$173.80	$141.72	$117.65	$90.91	$101.61	$88.24	$68.53	$88.24	$74.87	$68.53	$64.17			
TOTAL LABOR COSTS	$2,356.08	$0.00	$10,601.80	$0.00	$24,706.50	$0.00	$44,810.01	$0.00	$0.00	$0.00	$28,151.12	$0.00	$0.00	$110,625.51		
% DISTRIBUTION OF STAFFING	1.09%	0.00%	5.55%	0.00%	19.09%	0.00%	40.09%	0.00%	0.00%	0.00%	34.18%	0.00%	0.00%			
SUBTOTAL - FC 160 (162)														**$110,625.51**		

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
ROADWAY DESIGN - FC 160 (163)																
MISCELLANEOUS (ROADWAY)																
STORM WATER POLLUTION PREVENTION PLANS (SW3P)																
PREPARE SW3P LAYOUTs(SCALE: H 1"=100') (42 SHEETS ASSUMED)	4		24		60		120				200			408	N/A	N/A
PREPARE TXDOT SW3P SHEET														0		
IDENTIFY TEMPORARY EROSION CONTROL DEVICES	8		24		28		16				12			88		
SW3P Standard Sheets					1						3			4	N/A	N/A
SW3P QUANTITIES	1		16		16		16							49	N/A	N/A
														0	N/A	N/A
														0	N/A	N/A
														0	N/A	N/A
SPECIAL UTILITY DETAILS																
WATERLINE/SAN SEWER PLAN PROFILE (1"=40' SCALE)	4		32		40						120			196	24	8
MISC DETAILS	2		8		8						8			26	4	7
QUANTITIES, SPECIFICATIONS & ESTIMATE:																
ROADWAY QUANTITY SHEETS														0		
COMPUTE & TABULATE WATER AND SEWER QUANTITIES	4			4		8					4			20	2	10
COMPUTE & TABULATE REMOVAL QUANTITIES														0	N/A	N/A
RETAINING WALL SUMMARIES														0		
SUMMARY SHEETS FOR DRIVEWAY, MISCELLANEOUS QUANTITIES, ETC.														0		
GENERAL NOTES, SPECIFICATIONS AND PROVISIONS	2			8		8					4			22	N/A	N/A
CONSTRUCTION TIME DETERMINATION (PRIMAVERA)														0	N/A	N/A
CONSTRUCTION COST EST. (30, 60, 90, 95 & FINAL) WITH VARIANCE REPORT	2			8		12								22	N/A	N/A
MISCELLANEOUS DRAFTING/STANDARDS	1			2		4					8			15	N/A	N/A
PERMIT REVIEW FOR DRIVEWAYS, RDWY TIE-INS OR MODS WITHIN AREA														0	N/A	N/A
	28	0	104	22	153	32	152	0	0	0	359	0	0	850	30	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$196.34	$211.24	$173.80	$141.72	$117.65	$90.91	$101.61	$88.24	$68.53	$88.24	$74.87	$68.53	$64.17			
TOTAL LABOR COSTS	$5,497.52	$0.00	$18,075.20	$3,117.84	$18,000.45	$2,909.12	$15,444.72	$0.00	$0.00	$0.00	$26,878.33	$0.00	$0.00	$89,923.18		
% DISTRIBUTION OF STAFFING	3.29%	0.00%	12.24%	2.59%	18.00%	3.76%	17.88%	0.00%	0.00%	0.00%	42.24%	0.00%	0.00%			
SUBTOTAL - FC 160 (163)														**$89,923.18**		

DESCRIPTION													TOTAL MH BY FC	TOTAL COSTS BY FC
FEASIBILITY STUDIES - FC 102 (110)													0	$0.00
SOCIAL/ECON/ENVIRON STUDIES - FC 120 (120)													0	$0.00
RIGHT OF WAY DATA - FC 130 (130)													0	$0.00
MANAGING CONTRACTED/DONATED PE - FC 145 (164)													100	$12,163.14
ROADWAY DESIGN - FC 160 (160)													0	$0.00
ROADWAY DESIGN - FC 160 (161)													484	$51,305.24
ROADWAY DESIGN - FC 160 (162)													1,100	$110,625.51
ROADWAY DESIGN - FC 160 (163)													850	$89,923.18
ROADWAY DESIGN - FC 160 (170)													0	$0.00
SUBTOTAL LABOR EXPENSES													2534	**$264,017.07**
OTHER DIRECT EXPENSES	**COST/UNIT**													
Mileage (# of miles) (current state rate)	$0.540	1,000												$540.00
Per diem	$36.00													$0.00
Hotel	$85.00													$0.00
XXXX														$0.00
XXXX														$0.00
XXXX														$0.00
														$0.00
SUBTOTAL ODEs													0	**$540.00**

SUMMARY	
TOTAL COSTS	$264,017.07
NON-SALARY (OTHER DIRECT EXPENSES)	$540.00
GRAND TOTAL	$264,557.07

TASK DESCRIPTION	QUALITY MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
FEASIBILITY STUDIES - FC 102 (110)															
ROUTE & DESIGN STUDIES															
DATA COLLECTION & FIELD RECONNAISSANCE		4			4								8	N/A	N/A
ROADWAY AND HYDRAULIC DESIGN CRITERIA		2											2	N/A	N/A
REVIEW GEOTECHNICAL REPORT			2		2								4	N/A	N/A
FLOOD PLAIN INFORMATION & STUDIES			2		2								4		
HOURS SUB-TOTALS	0	6	4	0	8	0	0	0	0	0	0	0	18		
CONTRACT RATE PER HOUR	$230.44	$184.01	$140.75	$123.16	$91.06	$108.50	$87.24	$73.31	$93.29	$81.01	$74.23	$67.44			
TOTAL LABOR COSTS	$0.00	$1,104.06	$563.00	$0.00	$728.48	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$2,395.54		
% DISTRIBUTION OF STAFFING	0.0%	33.3%	22.2%	0.0%	44.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
SUBTOTAL - FC 102 (110)													**$2,395.54**		

TASK DESCRIPTION	QUALITY MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
ROADWAY DESIGN - FC 160 (161)															
DRAINAGE															
GENERAL PROJECT MANAGEMENT		12	8		16								36		
HYDROLOGIC STUDIES (VARNER CREEK)															
DELINEATE EXISTING DRAINAGE AREAS	1			8	8					8			25	1	
DETERMINE EXISTING HYDROLOGIC PARAMETERS	1			2	8								11		
CALCULATE EXISTING DISCHARGES	1			2	8								11		
FEMA FLOWS COMPARISON				2	2								4		
DELINEATE PROPOSED DRAINAGE AREAS	2			8	8					8			26		
DETERMINE PROPOSED HYDROLOGIC PARAMETERS	1			2	8								11		
CALCULATED PROPOSED DISCHARGES	1			2	8								11		
HYDRAULIC STUDIES - BRIDGES (VARNER CREEK)															
ASSIGN HYDROLOGY	1			2									3		
DEVELOP HEC-RAS MODEL FOR EXISTING BRIDGE	4	4		8	20								36		
DETERMINE EXISTING WATER SURFACE ELEVATIONS	2			8	8								18		
ANALYZE CROSSING AND RECOMMEND IMPROVEMENTS	6	6		20	24								56		
QUANTIFY IMPACTS AND RECOMMEND MITIGATION	8			28	28								64		
COMPUTE FLOODPLAIN STORAGE VOLUMES AND RECOMMEND MITIGATION	8			8					12				28		
DRAINAGE REPORT (VARNER CREEK COMPONENTS)															
PREPARE PRELIMINARY LETTER REPORT	4			8	12					12		2	38		
PREPARE DRAFT DRAINAGE REPORT	4			16	20					20		4	64		
PREPARE FINAL DRAINAGE REPORT	4			8	24					16			52		
SCOUR ANALYSIS (VARNER CREEK)															
PERFORM SCOUR ANALYSIS	2	2		8	12								24		
COORDINATE FINDINGS/MITIGATION WITH THE STATE	2	8		8									18		
PREPARE SEPARATE SCOUR REPORT	2			8	8					16			34		
CULVERT AND DITCH / STORM DRAIN DESIGN															
DRAINAGE COMPUTATION SHEETS (4 SHEETS)	4	16		9	68				4	32			133		
STORM SEWER PLAN AND PROFILE (ASSUME 16 SHEETS)	16	30	24		100				18	320			508		
STORM SEWER LATERALS (ASSUME 12 SHEETS)	12	24		20	60				32	200			348		
NON-STANDARD DETAILS (ASSUME NO MORE THAN 2 SHEETS)	4	8			16				4	32			64		
DRAINAGE QUANTITIES (STORM SEWER - ASSUME NO MORE THAN 3 SHEETS)	3	5		12	38					20			78		
HYDRAULIC DATA SHEET (VARNER CREEK)	2			2	2					34			40		
HOURS SUB-TOTALS	95	115	32	199	506	0	0	0	70	718	0	6	1,741	1	
CONTRACT RATE PER HOUR (INCLUDE AVG HOURLY RATE TIME OVERHEAD AND FF)	$230.44	$184.01	$140.75	$123.16	$91.06	$108.50	$87.24	$73.31	$93.29	$81.01	$74.23	$67.44			
TOTAL LABOR COSTS	$21,891.80	$21,161.15	$4,504.00	$24,508.84	$46,076.36	$0.00	$0.00	$0.00	$6,530.30	$58,165.18	$0.00	$404.64	$183,242.27		
% DISTRIBUTION OF STAFFING	5.46%	6.61%	1.84%	11.43%	29.06%	0.00%	0.00%	0.00%	4.02%	41.24%	0.00%	0.34%			
SUBTOTAL - FC 160 (161)													**$183,242.27**		

DESCRIPTION												TOTAL MH BY FC	TOTAL COSTS BY FC
FEASIBILITY STUDIES - FC 102 (110)												18	$2,395.54
SOCIAL/ECON/ENVIRON STUDIES - FC 120 (120)												0	$0.00
RIGHT OF WAY DATA - FC 130 (130)												0	$0.00
MANAGING CONTRACTED/DONATED PE - FC 145 (164)												0	$0.00
ROADWAY DESIGN - FC 160 (160)												0	$0.00
ROADWAY DESIGN - FC 160 (161)												1,741	$183,242.27
ROADWAY DESIGN - FC 160 (162)												0	$0.00
ROADWAY DESIGN - FC 160 (163)												0	$0.00
ROADWAY DESIGN - FC 160 (170)												0	$0.00
SUBTOTAL LABOR EXPENSES												1759	**$185,637.81**
OTHER DIRECT EXPENSES	**COST/UNIT**		No Units										
Mileage (# of miles) (current state rate)	$0.540		120										$64.80
FEMA Data Request	$350.00		1										$350.00
B/W (8.5x11)	$0.10		120										$12.00
B/W (11x17)	$0.20		80										$16.00
Color (8.5x11)	$0.40		40										$16.00
Color (11x17)	$0.65		20										$13.00
CD-ROM	$0.75		5										$3.75
													$0.00
SUBTOTAL DIRECT EXPENSES													**$475.55**

SUMMARY	
TOTAL COSTS	$185,637.81
NON-SALARY (OTHER DIRECT EXPENSES)	$475.55
GRAND TOTAL	$186,113.36

TASK DESCRIPTION	PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR GEOLOGIST	GEOLOGIST	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
FEASIBILITY STUDIES - FC 102 (110)														
ROUTE & DESIGN STUDIES														
												0	N/A	N/A
REVIEW GEOTECHNICAL REPORT	8	24	48								18	98	N/A	N/A
												0		
												0		
HOURS SUB-TOTALS	8	24	48	0	0	0	0	0	0	0	18	98		
CONTRACT RATE PER HOUR	$173.03	$158.87	$125.84	$107.53	$91.23	$100.67	$80.63	$62.92	$121.12	$95.95	$67.64			
TOTAL LABOR COSTS	$1,384.24	$3,812.88	$6,040.32	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1,217.52	$12,454.96		
% DISTRIBUTION OF STAFFING	8.2%	24.5%	49.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	18.4%			
SUBTOTAL - FC 102 (110)												**$12,454.96**		

DESCRIPTION											**TOTAL MH BY FC**	**TOTAL COSTS BY FC**
FEASIBILITY STUDIES - FC 102 (110)											98	$12,454.96
SUBTOTAL LABOR EXPENSES											98	**$12,454.96**

OTHER DIRECT EXPENSES	**QUANTITY**	**UNIT**	**COST/UNIT**									
Mileage (# of miles) (current state rate)		Miles	$0.540									$0.00
Per diem		Day	$36.00									$0.00
Hotel		Day	$85.00									$0.00
SUBTOTAL DIRECT EXPENSES												**$0.00**

SUMMARY	
TOTAL COSTS	$12,454.96
NON-SALARY (OTHER DIRECT EXPENSES)	$0.00
GRAND TOTAL	**$12,454.96**

TASK DESCRIPTION	PROJECT MANAGER RPLS	TASK MANAGER RPLS	3 PERSON CREW	FLAGGER	SENIOR SURVEY TECH	SURVEY TECH	SENIOR CADD OPERATOR	ADMIN/ CLERICAL	ABSTRACTOR	TOTAL LABOR HRS. & COSTS	NO OF DWGS	LABOR HRS PER SHEET
DESIGN SURVEY - FC 150												
ROADWAY DESIGN - SURVEY												
ESTABLISH PROJECT BASELINE	4	40	220	76	60	60	80			540	N/A	N/A
ESTABLISH HORIZONTAL AND VERTICAL CONTROL POINTS	4	40	120	40	40	60	100			404	N/A	N/A
RIGHT OF ENTRY	2	10			16	50		40	100	218	N/A	N/A
LOCATE EXISTING ROW	20		80		40	30	20					
DESIGN SURVEYS - UPDATE PLANIMETRICS AND DTM	4	60	500	150		160	160			1034	N/A	N/A
STAKEOUT EXISTING ROW FOR ADDITIONAL DESIGN SURVEY WORK	4	15	150	40		100	40			349	N/A	N/A
											N/A	N/A
HOURS SUB-TOTALS	38	165	1070	306	156	460	400	40	100	2735		
CONTRACT RATE PER HOUR	$135.02	$119.25	$165.00	$35.02	$78.32	$68.24	$98.43	$48.78	$90.52			
TOTAL LABOR COSTS	$5,130.76	$19,676.25	$176,550.00	$10,716.12	$12,217.92	$31,390.40	$39,372.00	$1,951.20	$9,052.00	$306,056.65		
% DISTRIBUTION OF STAFFING	1.4%	6.0%	39.1%	11.2%	5.7%	16.8%	14.6%	1.5%	3.7%	100.00%		
SUBTOTAL - FC 150										**$306,056.65**		

OTHER DIRECT EXPENSES	**COST/UNIT**	**UNIT**								
Mileage (150 of miles/10hr day) (current state rate)	$0.540	17550								$9,477.00
Per diem	$36.00									
Hotel	$85.00									
Materials and shipping	$25.00	6								$150.00
XXXX										
XXXX										
SUBTOTAL DIRECT EXPENSES										**$9,627.00**
SUBCONTRACTS:										
ROADWAY DESIGN - FC 160 (150 - SURVEYING)										**$306,056.65**
FEASIBILITY STUDIES - FC 102 (110 -)GEOTECH DESIGN										
SUBCONTRACT SUB-TOTAL										**$315,683.65**

SUMMARY	
TOTAL COSTS	$306,056.65
NON-SALARY (OTHER DIRECT EXPENSES)	$9,627.00
GRAND TOTAL	$315,683.65

Construction Services

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR HYDROLOGIST	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS
FC 309 (309) - Design Verif/Changes/Alter															
Shop drawings with review comments.	24					100	100					60		40	324
Redesign	16					100	100		80			60			356
Response to RFIs	20					100								40	160
Change order plans as requested by the State	20					100	140		80			60		12	412
Sub-Total Labor Hours	**80**	**0**	**0**	**0**	**0**	**400**	**340**	**0**	**160**	**0**	**0**	**180**	**0**	**92**	**1,252**
Direct Labor Cost	$ 5,616.00	$ -	$ -	$ -	$ -	$ 16,920.00	$ 10,404.00	$ -	$ 5,120.00	$ -	$ -	$ 4,698.00	$ -	$ 1,904.40	**$ 44,662.40**
Direct Labor Cost + OH =1 + 1.5231 (Office)	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	
Sub-Total Labor Cost	$ 14,169.73	$ -	$ -	$ -	$ -	$ 42,690.85	$ 26,250.33	$ -	$ 12,918.27	$ -	$ -	$ 11,853.52	$ -	$ 4,804.99	**$ 112,687.69**
Fixed Fee (10%)	$ 1,416.97	$ -	$ -	$ -	$ -	$ 4,269.09	$ 2,625.03	$ -	$ 1,291.83	$ -	$ -	$ 1,185.35	$ -	$ 480.50	**$ 11,268.77**
TOTAL LABOR COST	**$ 15,586.70**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 46,959.94**	**$ 28,875.36**	**$ -**	**$ 14,210.10**	**$ -**	**$ -**	**$ 13,038.87**	**$ -**	**$ 5,285.49**	**$ 123,956.46**

Expert Witness

FC 160 (163) – Roadway Design Miscellaneous (Roadway)															
Testimony for Right of Way Hearings (up to 54)															0
Condemnation Support	40		40	324										54	458
Exhibits	40				108	216					216				580
Sub-Total Labor Hours	**80**	**0**	**40**	**324**	**108**	**216**	**0**	**0**	**0**	**0**	**216**	**0**	**0**	**54**	**1,038**
Direct Labor Cost	$ 5,616.00	$ -	$ 2,952.00	$ 20,412.00	$ 5,151.60	$ 9,136.80	$ -	$ -	$ -	$ -	$ 6,804.00	$ -	$ -	$ 1,117.80	**$ 51,190.20**
Direct Labor Cost + OH =1 + 1.5231 (Office)	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	
Sub-Total Labor Cost	$ 14,169.73	$ -	$ 7,448.19	$ 51,501.52	$ 12,998.00	$ 23,053.06	$ -	$ -	$ -	$ -	$ 17,167.17	$ -	$ -	$ 2,820.32	**$ 129,157.99**
Fixed Fee (10%)	$ 1,416.97	$ -	$ 744.82	$ 5,150.15	$ 1,299.80	$ 2,305.31	$ -	$ -	$ -	$ -	$ 1,716.72	$ -	$ -	$ 282.03	**$ 12,915.80**
TOTAL LABOR COST	**$ 15,586.70**	**$ -**	**$ 8,193.01**	**$ 56,651.67**	**$ 14,297.80**	**$ 25,358.37**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 18,883.89**	**$ -**	**$ -**	**$ 3,102.35**	**$ 142,073.79**
FC 145 (164) - RIGHT-OF-WAY DATA															
Prepare Monthly Progress Reports															0
Sub-Total Labor Hours	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Direct Labor Cost	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Direct Labor Cost + OH =1 + 1.5231 (Office)	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	
Sub-Total Labor Cost	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Fixed Fee (10%)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
TOTAL LABOR COST	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**

OTHER DIRECT EXPENSES	COST/UNIT	Quantity		
				$0.00
Per diem	$36.00	30		$1,080.00
Hotel	$85.00	30		$2,550.00
Lodging/Hotel - Taxes and Fees	$0.00			$0.00
Lodging/Hotel (Taxes/fees not included)	$0.00			$0.00
Meals (Excluding alcohol & tips) (Overnight stay required)	$0.00			$0.00
Mileage	$0.540	500		$270.00
Rental Car Fuel	$25.00	30		$750.00
SUV or ATV Rental (Includes taxes and fees; Insurance costs will not be reimbursed)	$130.00			$0.00
Rental Car Fuel	$3.75			$0.00
Rental Car (Includes taxes and fees; Insurance costs will not be reimbursed)	$55.00	30		$1,650.00
Air Travel - In State - Short Notice (Coach)	$500.00			$0.00
Air Travel - In State - 2+ Wks Notice (Coach)	$400.00			$0.00
Air Travel - Out of State - 2+ Wks Notice (Coach)	$550.00	15		$8,250.00
Air Travel - Out of State - Short Notice (Coach)	$650.00			$0.00
Oversize, special handling or extra baggage airline fees (with advance coordination with TxDOT)	$100.00			$0.00
Taxi/Cab fare	$30.00			$0.00
Parking	$18.00	30		$540.00
Toll Charges	$2.00	15		$30.00
Standard Postage	$0.00			$0.00
Certified Letter Return Receipt	$0.00			$0.00
Overnight Mail - letter size	$0.00			$0.00
Overnight Mail - oversized box	$30.00			$0.00
Materials and Shipping	$25.00			$0.00
Courier Services	$25.00			$0.00
Photocopies B/W (11" X 17")	$0.20			$0.00
Photocopies B/W (8 1/2" X 11")	$0.10			$0.00
Photocopies Color (11" X 17")	$0.75	200		$150.00
Photocopies Color (8 1/2" X 11")	$0.40	200		$80.00
Digital Ortho Plotting	$1.50			$0.00
Plots (B/W on Bond)	$0.60			$0.00
Plots (Color on Bond)	$1.15			$0.00
Plots (Color on Photographic Paper)	$4.00			$0.00
Color Graphics on Foam Board	$5.00			$0.00
Presentation Boards 30" X 40" Color Mounted	$65.00	15		$975.00
Report Printing	$35.00			$0.00
Report Binding and tabbing	$5.00			$0.00
Reproduction of CD/DVD	$4.00			$0.00
CDs	$1.50			$0.00
4" X 6" Digital Color Print	$0.30			$0.00
Tx Parks & Wildlife Data Request Fees	$45.00			$0.00
Hazardous Materials Database Search	$325.00			$0.00
Noise Meter Rental	$110.00			$0.00
Environmental Field Supplies (lathes, stakes, flagging, spray paint, etc.)	$35.00			$0.00
Curator (Drawer & TX Archaeological Research Lab for artifacts & report)	$1,300.00			$0.00
Court Reporter	$6.00			$0.00
Court Reporter (Public Meetings, Hearings & Transcription)	$500.00			$0.00
Translator (English to Spanish, other language as appropriate, or Sign Language)	$100.00			$0.00
Custodian for Public Involvement	$28.00			$0.00
Sound Technician for Public Involvement	$250.00			$0.00
Public Involvement Facility Rental (estimate)	$750.00			$0.00
Public involvement Facility Rental (estimate)	$3,000.00			$0.00
Public Involvement Facility Rental (estimate)	$150.00			$0.00
Public Involvement Facility Rental	$800.00			$0.00
Audio - Equipment Rental	$200.00			$0.00
Audio - Visual Equipment Rental	$350.00			$0.00
Public Notices - Mass Mailing (500 pieces)	$400.00			$0.00
FEMA FIS (Manual)	$5.00			$0.00
FEMA FIS Backup Data Request	$350.00			$0.00
FEMA Map Revision Submittal (CLOMR/LOMR) (Submittal Fee Only)	$5,000.00			$0.00
FEMA Model/Floodplain Hardcopy	$250.00			$0.00
SUBTOTAL DIRECT EXPENSES				**$16,325.00**

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS
Minimum Labor Rate Per Hour - Cost Plus Fixed Fee	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	
Maximum Labor Rate Per Hour - Cost Plus Fixed Fee	$ 73.00	$ 78.59	$ 62.75	$ 49.75	$ 43.00	$ 33.00	$ 36.86	$ 30.00	$ 25.63	$ 31.81	$ 28.00	$ 25.63	$ 22.28	
Labor Rate Per Hour (90% of Max Rate)	$ 65.70	$ 70.73	$ 56.48	$ 44.78	$ 38.70	$ 29.70	$ 33.17	$ 27.00	$ 23.07	$ 28.63	$ 25.20	$ 23.07	$ 20.05	
FC 309 (309) - Design Verif/Changes/Alter														
Shop drawings with review comments.	4		8	8		8							4	32
Redesign	4		8	8		8				8				36
Response to RFIs	4		8	8		8								28
Change order plans as requested by the State	4		8	8		8				8				36
Sub-Total Labor Hours	**16**	**0**	**32**	**32**	**0**	**32**	**0**	**0**	**0**	**16**	**0**	**0**	**4**	**132**
Direct Labor Cost	$ 1,051.20	$ -	$ 1,807.36	$ 1,432.96	$ -	$ 950.40	$ -	$ -	$ -	$ 458.08	$ -	$ -	$ 80.20	**$ 5,780.20**
Direct Labor Cost + OH =1 + 1.5231 (Office)	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	
Sub-Total Labor Cost	$ 2,652.28	$ -	$ 4,560.15	$ 3,615.50	$ -	$ 2,397.95	$ -	$ -	$ -	$ 1,155.78	$ -	$ -	$ 202.35	**$ 14,584.01**
Fixed Fee (10%)	$ 265.23	$ -	$ 456.02	$ 361.55	$ -	$ 239.80	$ -	$ -	$ -	$ 115.58	$ -	$ -	$ 20.24	**$ 1,458.40**
TOTAL LABOR COST	**$ 2,917.51**	**$ -**	**$ 5,016.17**	**$ 3,977.05**	**$ -**	**$ 2,637.75**	**$ -**	**$ -**	**$ -**	**$ 1,271.36**	**$ -**	**$ -**	**$ 222.59**	**$ 16,042.41**

OTHER DIRECT EXPENSES	COST/UNIT	Quantity	
			$0.00
Per diem	$36.00		$0.00
Hotel	$85.00		$0.00
Per diem	$36.00		$0.00
Hotel	$85.00		$0.00
Lodging/Hotel - Taxes and Fees	$0.00		$0.00
Lodging/Hotel (Taxes/fees not included)	$0.00		$0.00
Meals (Excluding alcohol & tips) (Overnight stay required)	$0.00		$0.00
Mileage	$0.540		$0.00
Rental Car Fuel	$25.00		$0.00
SUV or ATV Rental (Includes taxes and fees; Insurance costs will not be reimbursed)	$130.00		$0.00
Rental Car Fuel	$3.75		$0.00
Rental Car (Includes taxes and fees; Insurance costs will not be reimbursed)	$55.00		$0.00
Air Travel - In State - Short Notice (Coach)	$500.00		$0.00
Air Travel - In State - 2+ Wks Notice (Coach)	$400.00		$0.00
Air Travel - Out of State - 2+ Wks Notice (Coach)	$550.00		$0.00
Air Travel - Out of State - Short Notice (Coach)	$650.00		$0.00
Oversize, special handling or extra baggage airline fees (with advance coordination with TxDOT)	$100.00		$0.00
Taxi/Cab fare	$30.00		$0.00
Parking	$18.00		$0.00
Toll Charges	$2.00		$0.00
Standard Postage	$0.00		$0.00
Certified Letter Return Receipt	$0.00		$0.00
Overnight Mail - letter size	$0.00		$0.00
Overnight Mail - oversized box	$30.00		$0.00
Materials and Shipping	$25.00		$0.00
Courier Services	$25.00		$0.00
Photocopies B/W (11" X 17")	$0.20		$0.00
Photocopies B/W (8 1/2" X 11")	$0.10		$0.00
Photocopies Color (11" X 17")	$0.75		$0.00
Photocopies Color (8 1/2" X 11")	$0.40		$0.00
Digital Ortho Plotting	$1.50		$0.00
Plots (B/W on Bond)	$0.60		$0.00
Plots (Color on Bond)	$1.15		$0.00
Plots (Color on Photographic Paper)	$4.00		$0.00
Color Graphics on Foam Board	$5.00		$0.00
Presentation Boards 30" X 40" Color Mounted	$65.00		$0.00
Report Printing	$35.00		$0.00
Report Binding and tabbing	$5.00		$0.00
Reproduction of CD/DVD	$4.00		$0.00
CDs	$1.50		$0.00
4" X 6" Digital Color Print	$0.30		$0.00
Tx Parks & Wildlife Data Request Fees	$45.00		$0.00
Hazardous Materials Database Search	$325.00		$0.00
Noise Meter Rental	$110.00		$0.00
Environmental Field Supplies (lathes, stakes, flagging, spray paint, etc.)	$35.00		$0.00
Curator (Drawer & TX Archaeological Research Lab for artifacts & report)	$1,300.00		$0.00
Court Reporter	$6.00		$0.00
Court Reporter (Public Meetings, Hearings & Transcription)	$500.00		$0.00
Translator (English to Spanish, other language as appropriate, or Sign Language)	$100.00		$0.00
Custodian for Public Involvement	$28.00		$0.00
Sound Technician for Public Involvement	$250.00		$0.00
Public Involvement Facility Rental (estimate)	$750.00		$0.00
Public involvement Facility Rental (estimate)	$3,000.00		$0.00
Public Involvement Facility Rental (estimate)	$150.00		$0.00
Public Involvement Facility Rental	$800.00		$0.00
Audio - Equipment Rental	$200.00		$0.00
Audio - Visual Equipment Rental	$350.00		$0.00
Public Notices - Mass Mailing (500 pieces)	$400.00		$0.00
FEMA FIS (Manual)	$5.00		$0.00
FEMA FIS Backup Data Request	$350.00		$0.00
FEMA Map Revision Submittal (CLOMR/LOMR) (Submittal Fee Only)	$5,000.00		$0.00
FEMA Model/Floodplain Hardcopy	$250.00		$0.00
SUBTOTAL DIRECT EXPENSES			**$0.00**

OTHER DIRECT EXPENSES	COST/UNIT	Quantity	
			$0.00
Per diem	$36.00		$0.00
Hotel	$85.00		$0.00
Per diem	$36.00		$0.00
Hotel	$85.00		$0.00
Lodging/Hotel - Taxes and Fees	$0.00		$0.00
Lodging/Hotel (Taxes/fees not included)	$0.00		$0.00
Meals (Excluding alcohol & tips) (Overnight stay required)	$0.00		$0.00
Mileage	$0.575		$0.00
Rental Car Fuel	$25.00		$0.00
SUV or ATV Rental (Includes taxes and fees; Insurance costs will not be reimbursed)	$130.00		$0.00
Rental Car Fuel	$3.75		$0.00
Rental Car (Includes taxes and fees; Insurance costs will not be reimbursed)	$55.00		$0.00
Air Travel - In State - Short Notice (Coach)	$500.00		$0.00
Air Travel - In State - 2+ Wks Notice (Coach)	$400.00		$0.00
Air Travel - Out of State - 2+ Wks Notice (Coach)	$550.00		$0.00
Air Travel - Out of State - Short Notice (Coach)	$650.00		$0.00
Oversize, special handling or extra baggage airline fees (with advance coordination with TxDOT)	$100.00		$0.00
Taxi/Cab fare	$30.00		$0.00
Parking	$18.00		$0.00
Toll Charges	$2.00		$0.00
Standard Postage	$0.00		$0.00
Certified Letter Return Receipt	$0.00		$0.00
Overnight Mail - letter size	$0.00		$0.00
Overnight Mail - oversized box	$30.00		$0.00
Materials and Shipping	$25.00		$0.00
Courier Services	$25.00		$0.00
Photocopies B/W (11" X 17")	$0.20		$0.00
Photocopies B/W (8 1/2" X 11")	$0.10		$0.00
Photocopies Color (11" X 17")	$0.75		$0.00
Photocopies Color (8 1/2" X 11")	$0.40		$0.00
Digital Ortho Plotting	$1.50		$0.00
Plots (B/W on Bond)	$0.60		$0.00
Plots (Color on Bond)	$1.15		$0.00
Plots (Color on Photographic Paper)	$4.00		$0.00
Color Graphics on Foam Board	$5.00		$0.00
Presentation Boards 30" X 40" Color Mounted	$65.00		$0.00
Report Printing	$35.00		$0.00
Report Binding and tabbing	$5.00		$0.00
Reproduction of CD/DVD	$4.00		$0.00
CDs	$1.50		$0.00
4" X 6" Digital Color Print	$0.30		$0.00
Tx Parks & Wildlife Data Request Fees	$45.00		$0.00
Hazardous Materials Database Search	$325.00		$0.00
Noise Meter Rental	$110.00		$0.00
Environmental Field Supplies (lathes, stakes, flagging, spray paint, etc.)	$35.00		$0.00
Curator (Drawer & TX Archaeological Research Lab for artifacts & report)	$1,300.00		$0.00
Court Reporter	$6.00		$0.00
Court Reporter (Public Meetings, Hearings & Transcription)	$500.00		$0.00
Translator (English to Spanish, other language as appropriate, or Sign Language)	$100.00		$0.00
Custodian for Public Involvement	$28.00		$0.00
Sound Technician for Public Involvement	$250.00		$0.00
Public Involvement Facility Rental (estimate)	$750.00		$0.00
Public involvement Facility Rental (estimate)	$3,000.00		$0.00
Public Involvement Facility Rental (estimate)	$150.00		$0.00
Public Involvement Facility Rental	$800.00		$0.00
Audio - Equipment Rental	$200.00		$0.00
Audio - Visual Equipment Rental	$350.00		$0.00
Public Notices - Mass Mailing (500 pieces)	$400.00		$0.00
FEMA FIS (Manual)	$5.00		$0.00
FEMA FIS Backup Data Request	$350.00		$0.00
FEMA Map Revision Submittal (CLOMR/LOMR) (Submittal Fee Only)	$5,000.00		$0.00
FEMA Model/Floodplain Hardcopy	$250.00		$0.00
SUBTOTAL DIRECT EXPENSES			**$0.00**

TASK DESCRIPTION	PROJECT MANAGER	QUALITY MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	ENGINEER IN TRAINING	SENIOR ENGINEERING TECH	ENGINEERING TECHNICIAN	JUNIOR ENGINEERING TECH	SENIOR CADD OPERATOR	CADD OPERATOR	JUNIOR CADD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS. & COSTS
Minimum Labor Rate Per Hour - Cost Plus Fixed Fee	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	$ 7.25	
Maximum Labor Rate Per Hour - Cost Plus Fixed Fee	$ 73.43	$ 79.00	$ 65.00	$ 53.00	$ 44.00	$ 34.00	$ 38.00	$ 33.00	$ 25.63	$ 33.00	$ 28.00	$ 25.63	$ 24.00	
Labor Rate Per Hour (90% of Max Rate)	$ 66.09	$ 71.10	$ 58.50	$ 47.70	$ 39.60	$ 30.60	$ 34.20	$ 29.70	$ 23.07	$ 29.70	$ 25.20	$ 23.07	$ 21.60	
FC 309 (309) - Design Verif/Changes/Alter														
Shop drawings with review comments.	4		8	8		8							4	32
Redesign	4		8	8		8				8				36
Response to RFIs	4		8	8		8								28
Change order plans as requested by the State	4		8	8		8				8				36
Sub-Total Labor Hours	**16**	**0**	**32**	**32**	**0**	**32**	**0**	**0**	**0**	**16**	**0**	**0**	**4**	**132**
Direct Labor Cost	$ 1,057.44	$ -	$ 1,872.00	$ 1,526.40	$ -	$ 979.20	$ -	$ -	$ -	$ 475.20	$ -	$ -	$ 86.40	**$ 5,996.64**
Direct Labor Cost + OH =1 + 1.5231 (Office)	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	2.5231	
Sub-Total Labor Cost	$ 2,668.03	$ -	$ 4,723.24	$ 3,851.26	$ -	$ 2,470.62	$ -	$ -	$ -	$ 1,198.98	$ -	$ -	$ 218.00	**$ 15,130.13**
Fixed Fee (10%)	$ 266.80	$ -	$ 472.32	$ 385.13	$ -	$ 247.06	$ -	$ -	$ -	$ 119.90	$ -	$ -	$ 21.80	**$ 1,513.01**
TOTAL LABOR COST	**$ 2,934.83**	**$ -**	**$ 5,195.56**	**$ 4,236.39**	**$ -**	**$ 2,717.68**	**$ -**	**$ -**	**$ -**	**$ 1,318.88**	**$ -**	**$ -**	**$ 239.80**	**$ 16,643.14**

OTHER DIRECT EXPENSES	COST/UNIT	Quantity	
			$0.00
Mileage	$0.540	250	$135.00
SUBTOTAL DIRECT EXPENSES			**$135.00**

ATTACHMENT E
FEE SCHEDULE
METHOD OF PAYMENT: LUMP SUM
TABLE OF DELIVERABLES

PRIME PROVIDER NAME: AECOM
PROJECT NAME/CSJ: 0188-03-019 SH 36: Brazoria County Line to 0.35 miles north of SH 35

FEASIBILITY STUDIES - FC 102(110)	$ 74,206.60
SOCIAL/ECON/ENVIRON STUDIES - FC 120(120)	$ 27,028.34
RIGHT OF WAY DATA - FC 130(130)	$ 257,395.38
MANAGING CONTRACTED/DONATED PE - FC 145(145, 164)	$ 412,542.75
ROADWAY DESIGN - FC 160(150)	$ 315,683.65
ROADWAY DESIGN - FC 160(160)	$ 772,871.84
ROADWAY DESIGN - FC 160(161)	$ 975,709.14
ROADWAY DESIGN - FC 160(162)	$ 153,530.00
ROADWAY DESIGN - FC 160(163)	$ 783,397.05
ROADWAY DESIGN - FC 160(165)	$ 347,082.98
ROADWAY DESIGN - FC 160(170)	$ 60,008.19
	$ 4,179,455.92

Submittal Number	Description of Deliverable	Summary of Function Code Deliverable	Percentage of Work by Function code	Payment Amount By Function Code	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
1	Data Collection and Review, Field Surveys, Base Map, Review EA & Prep Exhibits, Utility Coordination and Base Files, Review Sch & Ped, Preliminary Geometric Project Layout, Design Concept Conference, Soil Borings	FEASIBILITY STUDIES - FC 102(110)	100.00%	$74,206.60	$74,206.60	100.00%
		SOCIAL/ECON/ENVIRON STUDIES - FC 120(120)	50.00%	$13,514.17	$13,514.17	50.00%
		RIGHT OF WAY DATA - FC 130(130)	8.00%	$20,591.63	$20,591.63	8.00%
		MANAGING CONTRACTED/DONATED PE - FC 145(145, 164)	12.00%	$49,505.13	$49,505.13	12.00%
		ROADWAY DESIGN - FC 160(150)	50.00%	$157,841.83	$157,841.83	50.00%
		ROADWAY DESIGN - FC 160(160)	5.00%	$38,643.59	$38,643.59	5.00%
		ROADWAY DESIGN - FC 160(161)	5.00%	$48,785.46	$48,785.46	5.00%
		ROADWAY DESIGN - FC 160(162)	5.00%	$7,676.50	$7,676.50	5.00%
		ROADWAY DESIGN - FC 160(163)	5.00%	$39,169.85	$39,169.85	5.00%
		ROADWAY DESIGN - FC 160(165)	5.00%	$17,354.15	$17,354.15	5.00%
		ROADWAY DESIGN - FC 160(170)	5.00%	$3,000.41	$3,000.41	5.00%
			Sub-Total	**$470,289.32**	**$470,289.32**	**11.25%**

Submittal Number	Description of Deliverable	Summary of Function Code Deliverable	Percentage of Work by Function code	Payment Amount By Function Code	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
2	H&H Analysis, Roadway Design, Bridge Design, Interim Progress Submittal	FEASIBILITY STUDIES - FC 102(110)	0.00%	$0.00	$74,206.60	100.00%
		SOCIAL/ECON/ENVIRON STUDIES - FC 120(120)	40.00%	$10,811.34	$24,325.51	90.00%
		RIGHT OF WAY DATA - FC 130(130)	10.00%	$25,739.54	$46,331.17	18.00%
		MANAGING CONTRACTED/DONATED PE - FC 145(145, 164)	12.00%	$49,505.13	$99,010.26	24.00%
		ROADWAY DESIGN - FC 160(150)	50.00%	$157,841.83	$315,683.65	100.00%
		ROADWAY DESIGN - FC 160(160)	5.00%	$38,643.59	$77,287.18	10.00%
		ROADWAY DESIGN - FC 160(161)	5.00%	$48,785.46	$97,570.91	10.00%
		ROADWAY DESIGN - FC 160(162)	5.00%	$7,676.50	$15,353.00	10.00%
		ROADWAY DESIGN - FC 160(163)	5.00%	$39,169.85	$78,339.71	10.00%
		ROADWAY DESIGN - FC 160(165)	5.00%	$17,354.15	$34,708.30	10.00%
		ROADWAY DESIGN - FC 160(170)	5.00%	$3,000.41	$6,000.82	10.00%
			Sub-Total	**$398,527.79**	**$868,817.10**	**20.79%**

Submittal Number	Description of Deliverable	Summary of Function Code Deliverable	Percentage of Work by Function code	Payment Amount By Function Code	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
3	H&H Analysis, Roadway Design, Bridge Design, 30% Submittal	FEASIBILITY STUDIES - FC 102(110)	0.00%	$0.00	$74,206.60	100.00%
		SOCIAL/ECON/ENVIRON STUDIES - FC 120(120)	2.00%	$540.57	$24,866.07	92.00%
		RIGHT OF WAY DATA - FC 130(130)	8.00%	$20,591.63	$66,922.80	26.00%
		MANAGING CONTRACTED/DONATED PE - FC 145(145, 164)	10.00%	$41,254.28	$140,264.54	34.00%
		ROADWAY DESIGN - FC 160(150)	0.00%	$0.00	$315,683.65	100.00%
		ROADWAY DESIGN - FC 160(160)	30.00%	$231,861.55	$309,148.74	40.00%
		ROADWAY DESIGN - FC 160(161)	20.00%	$195,141.83	$292,712.74	30.00%
		ROADWAY DESIGN - FC 160(162)	20.00%	$30,706.00	$46,059.00	30.00%
		ROADWAY DESIGN - FC 160(163)	20.00%	$156,679.41	$235,019.12	30.00%
		ROADWAY DESIGN - FC 160(165)	10.00%	$34,708.30	$69,416.60	20.00%
		ROADWAY DESIGN - FC 160(170)	20.00%	$12,001.64	$18,002.46	30.00%
			Sub-Total	**$723,485.20**	**$1,592,302.30**	**38.10%**

Submittal Number	Description of Deliverable	Summary of Function Code Deliverable	Percentage of Work by Function code	Payment Amount By Function Code	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
4	H&H Analysis, Traffic Control, Roadway Design, Signing & Pavement Markings, Bridge Design, Interim Progress Submittal	FEASIBILITY STUDIES - FC 102(110)	0.00%	$0.00	$74,206.60	100.00%
		SOCIAL/ECON/ENVIRON STUDIES - FC 120(120)	0.00%	$0.00	$24,866.07	92.00%
		RIGHT OF WAY DATA - FC 130(130)	12.00%	$30,887.45	$97,810.24	38.00%
		MANAGING CONTRACTED/DONATED PE - FC 145(145, 164)	8.00%	$33,003.42	$173,267.96	42.00%
		ROADWAY DESIGN - FC 160(150)	0.00%	$0.00	$315,683.65	100.00%
		ROADWAY DESIGN - FC 160(160)	10.00%	$77,287.18	$386,435.92	50.00%
		ROADWAY DESIGN - FC 160(161)	10.00%	$97,570.91	$390,283.66	40.00%
		ROADWAY DESIGN - FC 160(162)	10.00%	$15,353.00	$61,412.00	40.00%
		ROADWAY DESIGN - FC 160(163)	10.00%	$78,339.71	$313,358.82	40.00%
		ROADWAY DESIGN - FC 160(165)	10.00%	$34,708.30	$104,124.89	30.00%
		ROADWAY DESIGN - FC 160(170)	10.00%	$6,000.82	$24,003.28	40.00%
			Sub-Total	**$373,150.79**	**$1,965,453.09**	**47.03%**

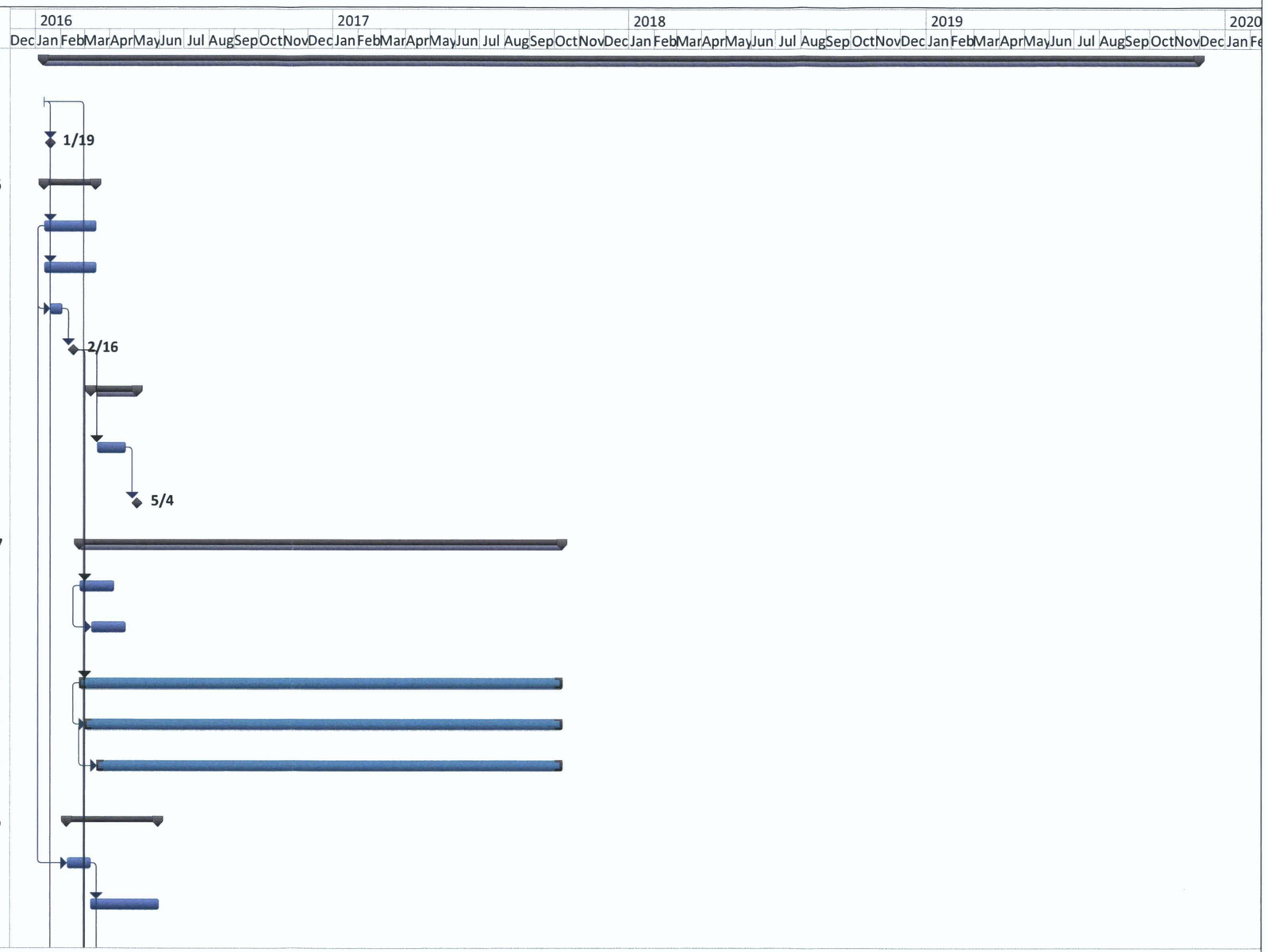
Submittal Number	Description of Deliverable	Summary of Function Code Deliverable	Percentage of Work by Function code	Payment Amount By Function Code	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
5	Interim Progress Submittal	FEASIBILITY STUDIES - FC 102(110)	0.00%	$0.00	$74,206.60	100.00%
		SOCIAL/ECON/ENVIRON STUDIES - FC 120(120)	0.00%	$0.00	$24,866.07	92.00%
		RIGHT OF WAY DATA - FC 130(130)	12.00%	$30,887.45	$128,697.69	50.00%
		MANAGING CONTRACTED/DONATED PE - FC 145(145, 164)	8.00%	$33,003.42	$206,271.38	50.00%
		ROADWAY DESIGN - FC 160(150)	0.00%	$0.00	$315,683.65	100.00%
		ROADWAY DESIGN - FC 160(160)	10.00%	$77,287.18	$463,723.10	60.00%
		ROADWAY DESIGN - FC 160(161)	10.00%	$97,570.91	$487,854.57	50.00%
		ROADWAY DESIGN - FC 160(162)	10.00%	$15,353.00	$76,765.00	50.00%
		ROADWAY DESIGN - FC 160(163)	10.00%	$78,339.71	$391,698.53	50.00%
		ROADWAY DESIGN - FC 160(165)	10.00%	$34,708.30	$138,833.19	40.00%
		ROADWAY DESIGN - FC 160(170)	10.00%	$6,000.82	$30,004.10	50.00%
			Sub-Total	**$373,150.79**	**$2,338,603.87**	**55.95%**

ATTACHMENT E
FEE SCHEDULE
METHOD OF PAYMENT: LUMP SUM

Submittal Number	Description of Deliverable	Summary of Function Code Deliverable	Percentage of Work by Function code	Payment Amount By Function Code	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
6		FEASIBILITY STUDIES - FC 102(110)	0.00%	$0.00	$74,206.60	100.00%
		SOCIAL/ECON/ENVIRON STUDIES - FC 120(120)	2.00%	$540.57	$25,406.64	94.00%
		RIGHT OF WAY DATA - FC 130(130)	20.00%	$51,479.08	$180,176.77	70.00%
		MANAGING CONTRACTED/DONATED PE - FC 145(145, 164)	20.00%	$82,508.55	$288,779.93	70.00%
		ROADWAY DESIGN - FC 160(150)	0.00%	$0.00	$315,683.65	100.00%
	60% Submittal	ROADWAY DESIGN - FC 160(160)	20.00%	$154,574.37	$618,297.47	80.00%
		ROADWAY DESIGN - FC 160(161)	20.00%	$195,141.83	$682,996.40	70.00%
		ROADWAY DESIGN - FC 160(162)	20.00%	$30,706.00	$107,471.00	70.00%
		ROADWAY DESIGN - FC 160(163)	20.00%	$156,679.41	$548,377.94	70.00%
		ROADWAY DESIGN - FC 160(165)	20.00%	$69,416.60	$208,249.79	60.00%
		ROADWAY DESIGN - FC 160(170)	20.00%	$12,001.64	$42,005.73	70.00%
			Sub-Total	**$753,048.03**	**$3,091,651.91**	**73.97%**
Submittal Number	**Description of Deliverable**	**Summary of Function Code Deliverable**	**Percentage of Work by Function code**	**Payment Amount By Function Code**	**Cumulative Total By Function Code**	**Cumulative Percentage of Work by Function**
7		FEASIBILITY STUDIES - FC 102(110)	0.00%	$0.00	$74,206.60	100.00%
		SOCIAL/ECON/ENVIRON STUDIES - FC 120(120)	2.00%	$540.57	$25,947.21	96.00%
		RIGHT OF WAY DATA - FC 130(130)	25.00%	$64,348.85	$244,525.61	95.00%
		MANAGING CONTRACTED/DONATED PE - FC 145(145, 164)	20.00%	$82,508.55	$371,288.48	90.00%
		ROADWAY DESIGN - FC 160(150)	0.00%	$0.00	$315,683.65	100.00%
	90% Submittal	ROADWAY DESIGN - FC 160(160)	18.00%	$139,116.93	$757,414.40	98.00%
		ROADWAY DESIGN - FC 160(161)	25.00%	$243,927.29	$926,923.68	95.00%
		ROADWAY DESIGN - FC 160(162)	25.00%	$38,382.50	$145,853.50	95.00%
		ROADWAY DESIGN - FC 160(163)	25.00%	$195,849.26	$744,227.20	95.00%
		ROADWAY DESIGN - FC 160(165)	35.00%	$121,479.04	$329,728.83	95.00%
		ROADWAY DESIGN - FC 160(170)	25.00%	$15,002.05	$57,007.78	95.00%
			Sub-Total	**$901,155.03**	**$3,992,806.94**	**95.53%**
Submittal Number	**Description of Deliverable**	**Summary of Function Code Deliverable**	**Percentage of Work by Function code**	**Payment Amount By Function Code**	**Cumulative Total By Function Code**	**Cumulative Percentage of Work by Function**
8		FEASIBILITY STUDIES - FC 102(110)	0.00%	$0.00	$74,206.60	100.00%
		SOCIAL/ECON/ENVIRON STUDIES - FC 120(120)	2.00%	$540.57	$26,487.77	98.00%
		RIGHT OF WAY DATA - FC 130(130)	3.00%	$7,721.86	$252,247.47	98.00%
		MANAGING CONTRACTED/DONATED PE - FC 145(145, 164)	5.00%	$20,627.14	$391,915.61	95.00%
		ROADWAY DESIGN - FC 160(150)	0.00%	$0.00	$315,683.65	100.00%
	95% Submittal	ROADWAY DESIGN - FC 160(160)	1.00%	$7,728.72	$765,143.12	99.00%
		ROADWAY DESIGN - FC 160(161)	3.00%	$29,271.27	$956,194.96	98.00%
		ROADWAY DESIGN - FC 160(162)	3.00%	$4,605.90	$150,459.40	98.00%
		ROADWAY DESIGN - FC 160(163)	3.00%	$23,501.91	$767,729.11	98.00%
		ROADWAY DESIGN - FC 160(165)	3.00%	$10,412.49	$340,141.32	98.00%
		ROADWAY DESIGN - FC 160(170)	3.00%	$1,800.25	$58,808.03	98.00%
			Sub-Total	**$106,210.10**	**$4,099,017.04**	**98.08%**

Submittal Number	Description of Deliverable	Summary of Function Code Deliverable	Percentage of Work by Function code	Payment Amount By Function Code	Cumulative Total By Function Code	Cumulative Percentage of Work by Function
9		FEASIBILITY STUDIES - FC 102(110)	0.00%	$0.00	$74,206.60	100.00%
		SOCIAL/ECON/ENVIRON STUDIES - FC 120(120)	2.00%	$540.57	$27,028.34	100.00%
		RIGHT OF WAY DATA - FC 130(130)	2.00%	$5,147.91	$257,395.38	100.00%
		MANAGING CONTRACTED/DONATED PE - FC 145(145, 164)	5.00%	$20,627.14	$412,542.75	100.00%
		ROADWAY DESIGN - FC 160(150)	0.00%	$0.00	$315,683.65	100.00%
	Final Submittal	ROADWAY DESIGN - FC 160(160)	1.00%	$7,728.72	$772,871.84	100.00%
		ROADWAY DESIGN - FC 160(161)	2.00%	$19,514.18	$975,709.14	100.00%
		ROADWAY DESIGN - FC 160(162)	2.00%	$3,070.60	$153,530.00	100.00%
		ROADWAY DESIGN - FC 160(163)	2.00%	$15,667.94	$783,397.05	100.00%
		ROADWAY DESIGN - FC 160(165)	2.00%	$6,941.66	$347,082.98	100.00%
		ROADWAY DESIGN - FC 160(170)	2.00%	$1,200.16	$60,008.19	100.00%
			Sub-Total	**$80,438.88**	**$4,179,455.92**	**100.00%**

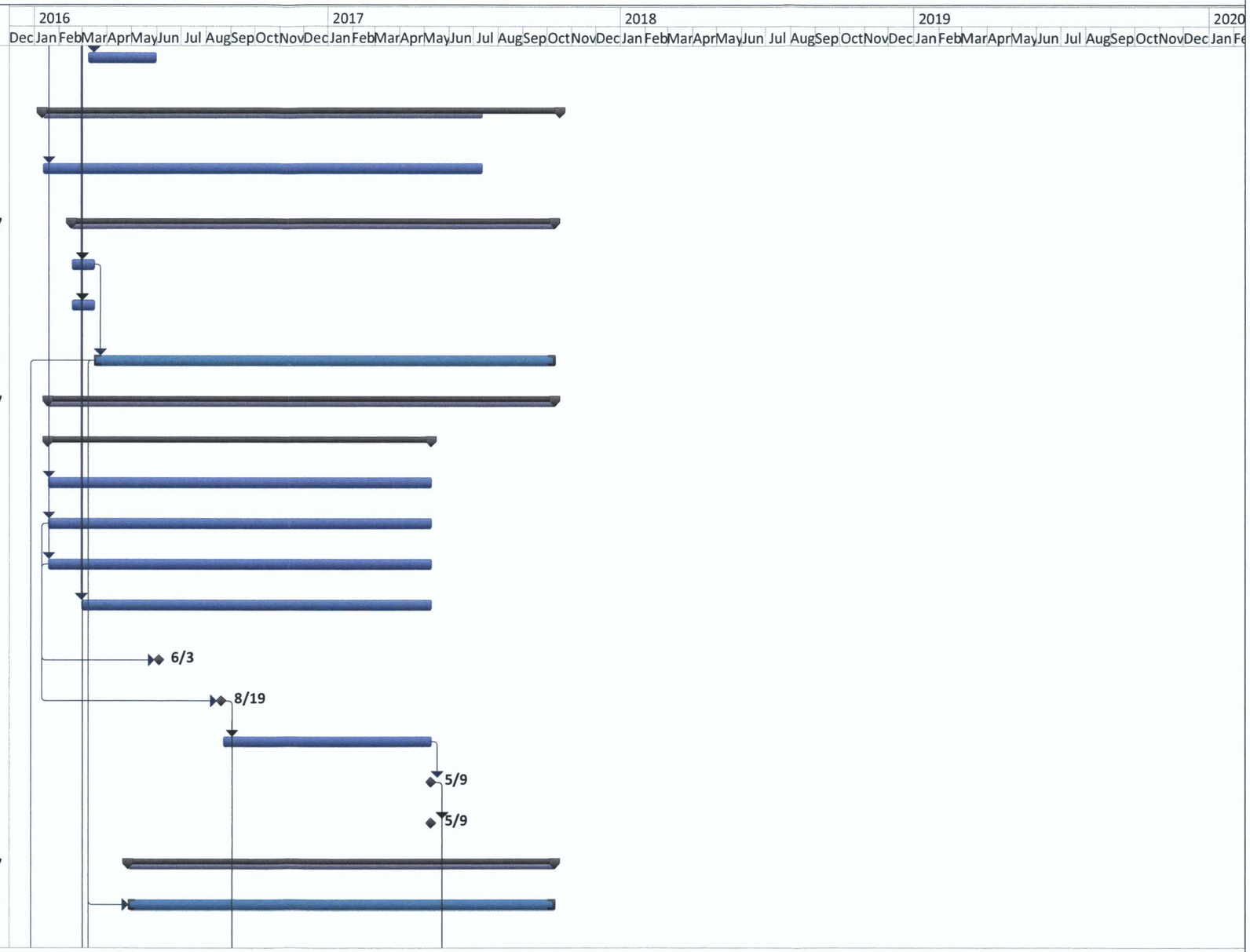
ID	Task Name	Duration	Start	Finish
1	**SH 36 PS&E Project**	**1016 days**	**Mon 1/11/16**	**Sat 11/30/19**
2	**NTP = DATE OF EXECUTION**	1 day	Mon 1/11/16	Mon 1/11/16
3	**Project Kick Off Meeting**	1 day	Tue 1/19/16	Tue 1/19/16
4	**FEASIBILITY STUDIES - FC 102 (110)**	**45 days**	**Tue 1/12/16**	**Mon 3/14/16**
5	DATA COLLECTION	45 days	Tue 1/12/16	Mon 3/14/16
6	FIELD RECONNAISSANCE	45 days	Tue 1/12/16	Mon 3/14/16
7	ROADWAY DESIGN CRITERIA	10 days	Tue 1/19/16	Mon 2/1/16
8	DESIGN CONCEPT CONFERENCE	1 day	Tue 2/16/16	Tue 2/16/16
9	**SOCIA/ECON/ENVIRON STUDIES - FC 120 (120)**	**41 days**	**Wed 3/9/16**	**Wed 5/4/16**
10	REVIEW OF EA & PREP EXHIBITS FOR MEETING	25 days	Wed 3/16/16	Tue 4/19/16
11	INFORMAL MEETING WITH PUBLIC	1 day	Wed 5/4/16	Wed 5/4/16
12	**RIGHT OF WAY DATA - FC 130 (130)**	**425 days**	**Wed 2/24/16**	**Tue 10/10/17**
13	REVIEW ROW MAPPING ACCESS MGT	30 days	Wed 2/24/16	Tue 4/5/16
14	ACCESS MANAGEMENT (EVALUATION & COORDINATION)	30 days	Wed 3/9/16	Tue 4/19/16
15	UTILITY LAYOUTS	425 days	Wed 2/24/16	Tue 10/10/17
16	UTILITY COORDINATION	420 days	Wed 3/2/16	Tue 10/10/17
17	HOUSTON DISTRICT UTILITY COOPERATIVE PROCESS	410 days	Wed 3/16/16	Tue 10/10/17
18	**DESIGN SURVEY- FC 160 (150)**	**80 days**	**Tue 2/9/16**	**Mon 5/30/16**
19	RIGHT OF ENTRY	20 days	Tue 2/9/16	Mon 3/7/16
20	Design Surveys - Update Planimetrics and DTM	60 days	Tue 3/8/16	Mon 5/30/16



Project: SH36_Schedule V3
Date: Thu 1/7/16

Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline
Split	External Tasks	Inactive Summary	Manual Summary	Critical
Milestone	External Milestone	Manual Task	Start-only	Critical Split
Summary	Inactive Task	Duration-only	Finish-only	Progress

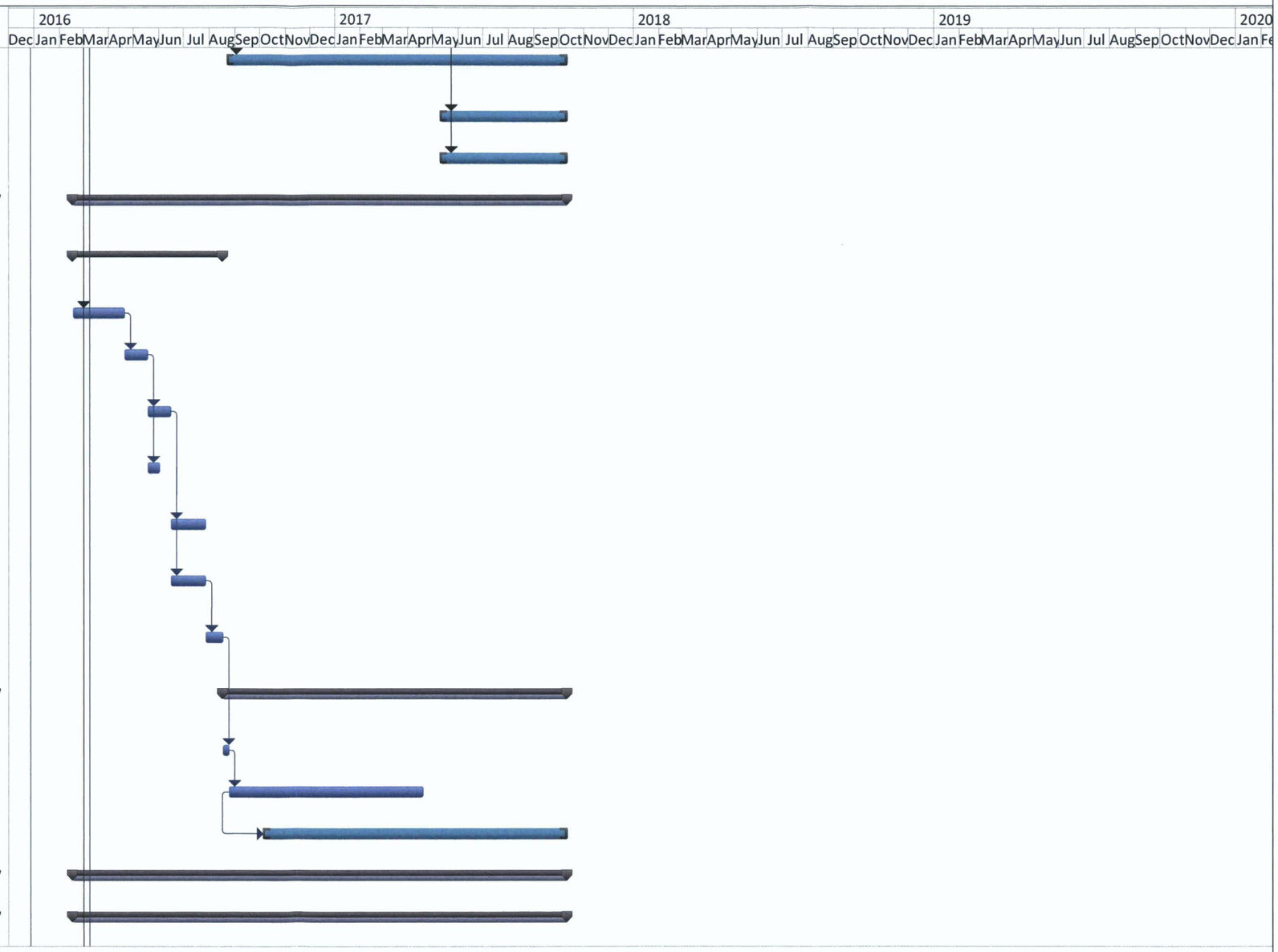
ID	Task Name	Duration	Start	Finish
21	Stakeout existing ROW for additional Design Survey work	60 days	Tue 3/8/16	Mon 5/30/16
22	**MANAGING CONTRACTED/DONATED PE - FC 145 (164)**	**461 days**	**Mon 1/11/16**	**Mon 10/16/17**
23	PROJECT MANAGEMENT & COORDINATION WITH TXDOT	391 days	Tue 1/12/16	Tue 7/11/17
24	**ROADWAY DESIGN - FC 160 (160)**	**430 days**	**Wed 2/17/16**	**Tue 10/10/17**
25	REVIEW SCHEMATIC & REFINE SCHEMATIC	20 days	Wed 2/17/16	Tue 3/15/16
26	REVIEW AND ANALYZE PEEDESTRIAN AND BICYCLE FACILITY NEEDS	20 days	Wed 2/17/16	Tue 3/15/16
27	ROADWAY DESIGN	410 days	Wed 3/16/16	Tue 10/10/17
28	**ROADWAY DESIGN - FC 160 (161)**	**452 days**	**Mon 1/18/16**	**Tue 10/10/17**
29	**DRAINAGE STUDIES**	**342 days**	**Mon 1/18/16**	**Tue 5/9/17**
30	HYDROLOGIC STUDIES	342 days	Mon 1/18/16	Tue 5/9/17
31	HYDRAULIC STUDIES - CULVERTS	342 days	Mon 1/18/16	Tue 5/9/17
32	HYDRAULIC STUDIES - BRIDGES	342 days	Mon 1/18/16	Tue 5/9/17
33	HYDRAULIC STUDIES - DITCH / STORM SEWER	312 days	Mon 2/29/16	Tue 5/9/17
34	PRELIMINARY LETTER REPORT	0 days	Fri 6/3/16	Fri 6/3/16
35	DRAFT DRAINAGE REPORT	0 days	Fri 8/19/16	Fri 8/19/16
36	SCOUR ANALYSIS (VARNER CREEK)	187 days	Mon 8/22/16	Tue 5/9/17
37	FINAL DRAINAGE REPORT	0 days	Tue 5/9/17	Tue 5/9/17
38	FINAL SCOUR REPORT	0 days	Tue 5/9/17	Tue 5/9/17
39	**DRAINAGE DESIGN**	**380 days**	**Wed 4/27/16**	**Tue 10/10/17**
40	CULVERT AND DITCH / STORM DRAIN DESIGN	380 days	Wed 4/27/16	Tue 10/10/17



Project: SH36_Schedule V3
Date: Thu 1/7/16

Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline
Split	External Tasks	Inactive Summary	Manual Summary	Critical
Milestone	External Milestone	Manual Task	Start-only	Critical Split
Summary	Inactive Task	Duration-only	Finish-only	Progress

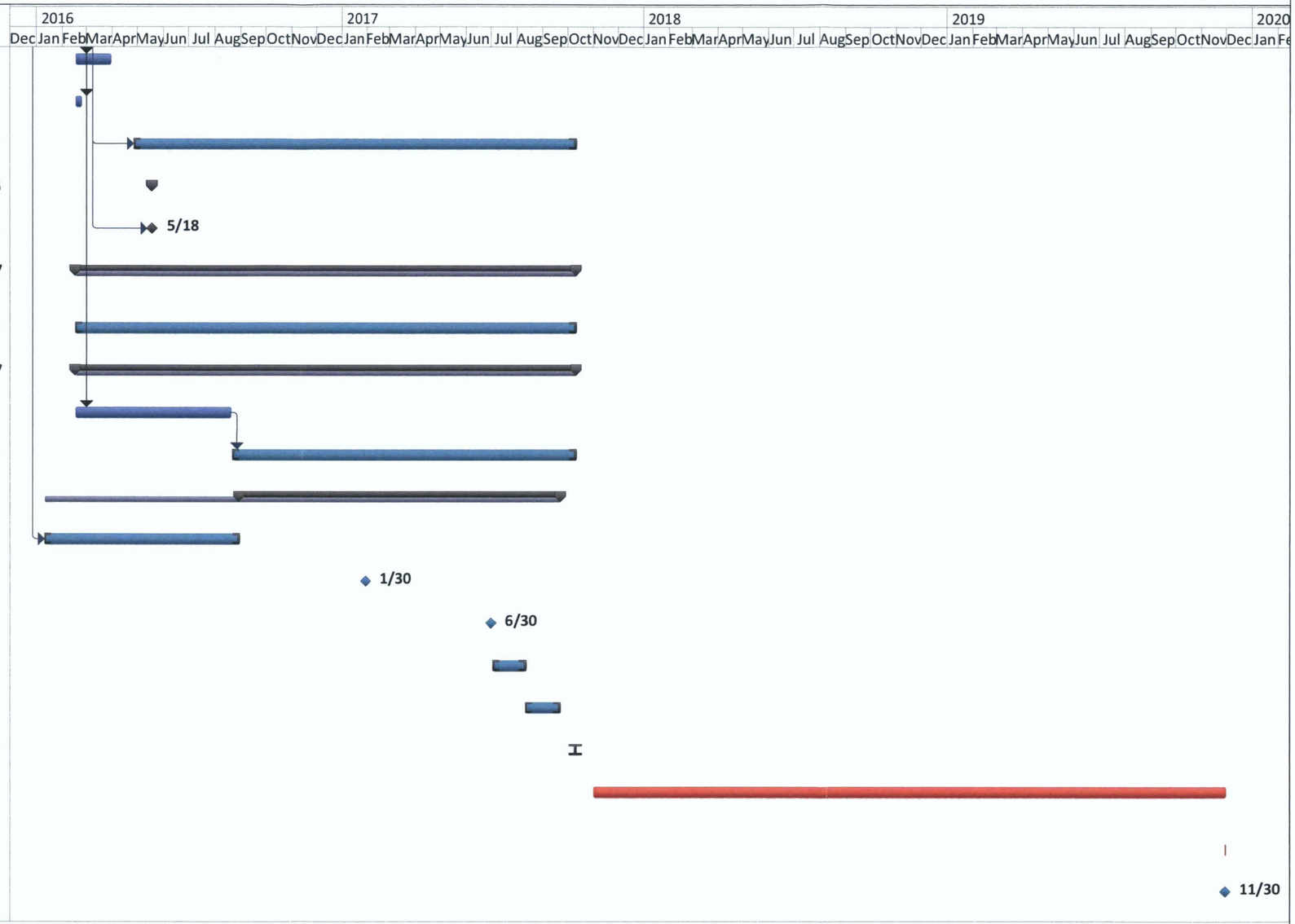
ID	Task Name	Duration	Start	Finish
41	LAYOUT, STRUCTURAL DESIGN AND DETAILING OF DRAINAGE FEATURS	297 days	Mon 8/22/16	Tue 10/10/17
42	**FLOODPLAIN CUT AND FILL**	110 days	Wed 5/10/17	Tue 10/10/17
43	**TEMPORARY DRAINAGE FACILITIES**	110 days	Wed 5/10/17	Tue 10/10/17
44	**ROADWAY DESIGN - FC 160 (162) - SIGNING, PVMT. MARKING, & SIGNAL**	**430 days**	**Wed 2/17/16**	**Tue 10/10/17**
45	**TRAFFIC WARRANT STUDIES (16 LOCATIONS)**	**130 days**	**Wed 2/17/16**	**Tue 8/16/16**
46	COLLECT TRAFFIC COUNTS	45 days	Wed 2/17/16	Tue 4/19/16
47	REVIEW/DEVLOP EXISTING TMC FOR WARRANT STUDY	20 days	Wed 4/20/16	Tue 5/17/16
48	DEVELOP FUTURE YEAR TMC FOR WARRANT STUDY	20 days	Wed 5/18/16	Tue 6/14/16
49	DEVELOP BASE MODEL FOR WARRANT ANALYSIS	10 days	Wed 5/18/16	Tue 5/31/16
50	PERFORM EXISTING CONDITION WARRANT ANALYSIS	30 days	Wed 6/15/16	Tue 7/26/16
51	PERFORM FUTURE CONDITION WARRANT ANALYSIS	30 days	Wed 6/15/16	Tue 7/26/16
52	SUMMARIZE WARRANT ANALYSIS RESULTS	15 days	Wed 7/27/16	Tue 8/16/16
53	**TRAFFIC SIGNALS (PERMANENT) LIST LOCATION(S)**	**300 days**	**Wed 8/17/16**	**Tue 10/10/17**
54	SITE VISIT AND FIELD INVESTIGATION	5 days	Wed 8/17/16	Tue 8/23/16
55	EXISTING CONDITION DIAGRAM	170 days	Wed 8/24/16	Tue 4/18/17
56	PROPOSED SIGNAL DESIGN	265 days	Wed 10/5/16	Tue 10/10/17
57	**ROADWAY DESIGN - FC 160 (163)**	**430 days**	**Wed 2/17/16**	**Tue 10/10/17**
58	**TRAFFIC CONTROL PLANS**	**430 days**	**Wed 2/17/16**	**Tue 10/10/17**



Project: SH36_Schedule V3
Date: Thu 1/7/16

Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline
Split	External Tasks	Inactive Summary	Manual Summary	Critical
Milestone	External Milestone	Manual Task	Start-only	Critical Split
Summary	Inactive Task	Duration-only	Finish-only	Progress

ID	Task Name	Duration	Start	Finish
59	DATA COLLECTION	30 days	Wed 2/17/16	Tue 3/29/16
60	FIELD RECONNAISSANCE	5 days	Wed 2/17/16	Tue 2/23/16
61	TRAFFIC CONTROL DESIGN	380 days	Wed 4/27/16	Tue 10/10/17
62	**VALUE ENGINEERING (VE)**	**1 day**	**Wed 5/18/16**	**Wed 5/18/16**
63	ATTEND VE STUDY	1 day	Wed 5/18/16	Wed 5/18/16
64	**-TRANSPORTATION MANAGEMENT SYSTEM - FC 160 (165)**	**430 days**	**Wed 2/17/16**	**Tue 10/10/17**
65	ITS DESIGN	430 days	Wed 2/17/16	Tue 10/10/17
66	**BRIDGE DESIGN - FC 160 (170)**	**430 days**	**Wed 2/17/16**	**Tue 10/10/17**
67	BRIDGE LAYOUTS	133 days	Wed 2/17/16	Fri 8/19/16
68	BRIDGE DESIGN	297 days	Mon 8/22/16	Tue 10/10/17
69	**SUBMITTAL PACKAGES**	**278 days**	**Tue 8/30/16**	**Thu 9/21/17**
70	30% SUBMITTAL	167 days	Mon 1/11/16	Tue 8/30/16
71	60% SUBMITTAL	110 days	Tue 8/30/16	Mon 1/30/17
72	90% SUBMITTAL	110 days	Mon 1/30/17	Fri 6/30/17
73	95% SUBMITTAL	30 days	Mon 7/3/17	Fri 8/11/17
74	100% SUBMITTAL	30 days	Fri 8/11/17	Thu 9/21/17
75	**LETTING DATE**	1 day	Tue 10/10/17	Tue 10/10/17
76	FC 309 CHANGE ORDER CONSTRUCTION SERVICES	544 days	Wed 11/1/17	Sat 11/30/19
77	**CONSTRUCTION COMPLETION**	1 day	Sat 11/30/19	Sat 11/30/19
78	**CONTRACT TERMINATION DATE**	1 day	Sat 11/30/19	Sat 11/30/19



Project: SH36_Schedule V3
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Task	Project Summary	Inactive Milestone	Manual Summary Rollup	Deadline
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Legacy Contract No. 12-5SDP5124
PeopleSoft Contract No. 5003

ATTACHMENT G

STATE DOCUMENT AND INFORMATION EXCHANGE HOUSTON DISTRICT PROCEDURES

House Bill 6 enacted by the 63rd legislature, established uniform procedures for the transmittal of Texas Department of Transportation (STATE) information to outside parties. This procedure is currently being successfully used for documenting the transmittal of computer data. The following corollary procedure has been developed to assure uniform transaction documentation, adequate storage environments, and sufficient information to enable indexing and shared access of computer media received.

Exchange of project files between the Project Engineer and the Engineer may be easily handled using our FTP server. Instructions for the use of FTP can be found internally at http://houwwwcn1/groups/informationsystems/faqs/FAQframesPage.htm. If FTP can not be used, deliveries of virus-free CDs containing project files by the Consultant/Contractor are to include a completed MEDIA INFORMATION FORM (hardcopy sample attached).

Upon final approval and acceptance of the job, the Project Engineer will send all project files and one copy of the MEDIA INFORMATION FORM (if applicable) to Network Operations in Information Systems for archiving, indexing, and subsequent retrieval. Information and instructions regarding the archiving of design projects may be found internally at http://houwwwcn1/groups/informationsystems/faqs/FAQframesPage.htm. The information on archived design projects will be available for use by all STATE employees.

No media will be accepted by a STATE Project Engineer without a properly prepared MEDIA INFORMATION FORM.

It is the additional responsibility of the Project Engineer to assure all files received from an Engineer meet STATE standards whether via FTP or on CD. To enable a workable procedure that will benefit all computer users, information on files delivered by CD must also be included as follows:

1. Use the MEDIA INFORMATION FORM to document any existing Consultant/Contractor prepared, original, computer media in your possession.

2. Review the prepared forms and determine that adequate indexing information is available. Based solely on the information contained on the form, one should be able to determine the media contents.

   A. If existing media documentation is adequate, forward the media and the completed requisite form to Network Operations.

   B. If existing media documentation is inadequate, review the contents of the media locally and complete the documentation prior to submitting to Network operations.

SPECIAL PROVISIONS
STANDARDS AND REQUIREMENTS

PURPOSE:

The purpose of the following Special Provisions is to identify and define STATE's Information Systems requirements and approved procedures to facilitate their use. Recognizing that STATE has a significant investment in hardware, software, and training of personnel engaged in automated plan preparation, precautions are required to assure that the products of this contract are compatible with that investment. It is STATE's intention that: The Engineer shall provide virus-free files and plots generated from those files. The virus-free files provided, using STATE's hardware and software, must display as plotted and subsequently plot as displayed without conversion, translation, or additional manipulation. In as much as the goal of this contract is to obtain the Engineer's original engineering products, no conversion or translation expenses incurred by the Engineer shall be charged to, or be paid by, STATE.

GENERAL REQUIREMENTS:

Due to the variety of hardware and software available in each section and area office, and to assure the compatibility of files received and data exchanged, the Project Engineer will indicate all approved media(s) and data format(s) on the included APPROVED PRODUCTS LIST. The Consultant/Contractor shall provide, using exclusively the products selected from the APPROVED PRODUCTS LIST, virus-free files and data conforming to the column spacing and format conventions required by STATE programs unless alternately directed by the Project Engineer (see attached Column and Spacing Formats section of these Special Provisions). The Engineer shall scan the media for viruses prior to uploading via FTP or delivering any files to STATE.

It is the Engineer's responsibility to solicit any additional information that may be required to assure that all media, files and data formats are 100 percent compatible with STATE's information resources.

MICROSTATION GRAPHICS FILES:

The Engineer shall be furnished, on the Department's choice of media listed on the attached APPROVED PRODUCTS LIST, the following information:

1. STATE's File Examples
2. STATE's Plot File Examples
3. CAD File Naming Convention Guideline for the Houston District

MicroStation .DGN file characteristics will be consistent with STATE standards including, but not limited to, level use, font designations, line weight and color criteria. These characteristics are not to be altered or revised in any manner without authorization by the District Information Resources Administrator. Should a compatibility problem arise, it is the responsibility of the Engineer to bring the problem to the attention of the STATE Project Manager who will work with Information Systems personnel and negotiate an appropriate solution.

It is the intent of STATE, and this contract, to secure MicroStation .DGN files which have elements of the same integrity, singularly, and attributes as elements generated by STATE's CADD system, Bentley's MicroStation, as well as, file utilization consistent with STATE standards. (See this project's Scope of Services for specific version information.)

Project Design File Criteria

File Descriptions And Terminology: Level use, element location, style, and symbology requirements follow:

Planimetric File: Generally a product of stereo digitized aerial photography. The planimetric contains existing topographic and geographic features within the limits of the projected contract. The Planimetric serves as a foundation for referencing and the development of the proposed. Without the Project Engineers written agreement, this file shall not be modified.

Master Design File, or Schematic Layout: Graphical description of proposed improvements containing graphic elements representing engineering alignments and proposed features. Categories which can simultaneously reference identical coordinates of the planimetric include Right Of Way Maps, Roadway Design, Bridge Design, Traffic Signing, Signals, Striping and Control Plans, and Project Limits Profiles.

SHEET FILE:

Standard sheet format should be appropriate to the category of the Design File it references. The referenced Design File is to be displayed within a single sheet file and will be terminated by clip referencing to matchlines contained in the Design File. The sheet file will contain all annotation appropriate to the Design File application or category being referenced. Typical examples are text, dimensioning, ramp labeling, patterning, hatching, profile data, etc.

File Requirements

The virus-free media delivered by the Engineer shall include documentation of the following:

1. A Media Directory Listing shall be supplied for this information.

2. The symbology, weight, style and color standards for design elements. (See DGNLIB @ www.dot.state.tx.us/isd/geopak/STATEcadd.htm)

3. Level menu showing level use consistent with STATE standards. (See DGNLIB @ www.dot.state.tx.us/isd/geopak/STATEcadd.htm)

4. Font characteristics and pen tables consistent with STATE standards. (Standards Attached)

5. Completed Engineer media index showing name and contact information for computer systems utilized by the Engineer. (Form Attached)

6. CAD File Naming Convention Guidelines for the Houston District. (Standards available internally at Link: http://houtxdocs/houtxdocs/links.asp?id=HOUSTON004622631)

MINIMUM MICROSTATION GRAPHIC FILE REQUIREMENTS:

As a minimum requirement, the MicroStation .DGN graphic files shall be comprised of elements defined with the following graphic entities and attributes.

Required graphic entities:

Line	-	2 connected points that form a single entity
Line Strings	-	a series of connected points that form a single entity
Polygon	-	a series of connected points that form a closed entity
Circle	-	the geometric definition of a circle (not a line string)
Arc	-	a segment of a circle (not a linestring or polygon)
Symbol	-	a group of graphic entities that form a single entity
Cell	-	a named, retrievable symbol

Required entity attributes:

Level	-	a drawing layer that can be selectively turned on or off
Line Weight	-	a line weight (width)
Line Style	-	a line symbology (dashed, dot-dash, etc.)
Color	-	a color code

All plots and graphics media provided as a result of this contract shall become the property of STATE.

APPROVED PRODUCTS LIST

(STATE: Check the appropriate media.)

Microcomputer and High-End Workstation Media Types	Data Format
__ CD-ROM	__ Intel
__ DVD-ROM	__ Intel
__ USB Memory Stick	__ Intel

POSSIBLE SOFTWARE

(STATE: Check the appropriate software.)
(Enter version number in space provided.)

Word Processors	**Spreadsheet Programs**
Microsoft Word v._____	Microsoft Excel v._____
Database Programs	**Operating System**
Microsoft Access v._____	Microsoft XP v._____
CADD Software	
Bentley MicroStation v._____	
Bentley GeoPak v._____	

Project Engineer's Printed Name: _____

Project Engineer's Signature: _____

Legacy Contract No. 12-5SDP5124
PeopleSoft Contract No. 5003

TEXAS DEPARTMENT OF TRANSPORTATION
MEDIA INFORMATION FORM

FIRM NAME _____

FIRM CONTACT _____ **PHONE NO.** _____

STATE CONTACT _____

MEDIA OPERATING SYSTEMS _____

MEDIA FORMAT _____

LIMITS _____

ACCOUNT/CONTRACT NO. _____

CSJ NO. _____ **HIGHWAY NO.** _____

THE FILES HAVE BEEN SCANNED
FOR VIRUSES AND ARE VIRUS FREE: _____
(NAME)

(EXAMPLE FOR THE MEDIA LABEL: THE FILES LISTED ON THIS FORM THAT ARE ON 2 OR MORE MEDIA MUST BE LABELED WITH THE CSJ NO. 0999-99-9999 AND NUMBERING SYSTEM OF 1 OF 2, 2 OF 2.)

MEDIA LABEL _____ **OF** _____

TO BE COMPLETED BY HOUSTON DISTRICT INFORMATION SYSTEMS PERSONNEL

INDEX NUMBER: _____ **DATE RECEIVED:** _____

RECEIVED BY: _____

DELIVERED BY: _____

VERIFIED VIRUS FREE: _____ **DATE:** _____

SPECIAL INSTRUCTIONS: _____

Legacy Contract No. 12-5SDP5124
PeopleSoft Contract No. 5003

DRAWING INDEX

CSJ NO. _____ HIGHWAY NO. _____

MEDIA LABEL _____ OF _____ ACCOUNT/CONTRACT NO. _____

DESIGN FILE NAME	DESCRIPTION/STATION LIMITS	SIZE	SHEET	REFERENCE
102ral01.dgn	Alignment File			

(Revised 09/10)

LEVEL STRUCTURE

CSJ NO.	DRAWING TITLE	HIGHWAY
	ROADWAY PLAN AND PROFILE	

DESIGN FILE NAME	STATION LIMITS	SHEET NO
RPP09.DGN	**1046+00 TO 1057+00**	**107**

RF	REFERENCE FILE NAME	REFERENCE DESCRIPTION
1	*ALIGN.DGN*	*HORIZONTAL ALIGNMENT FILE*
2	*BGEOM.DGN*	*BRIDGE GEOMETRY FILE*
3	*DTOPO.DGN*	*DESIGN TOPOGRAPHY*
4	*RGEOM.DGN*	*ROADWAY GEOMETRY FILE*
5	*PPSHT01.DGN*	*REF BORDER FOR ROAD PLAN AND PROFILE SHTS.*
6	*RDWYPRO.DGN*	*BELTWAY 8 PROFILE*
CELL LIBRARY:		*BGE.CEL*
PLOT CONFIG:		*BGE.PLT*

Legacy Contract No. 12-5SDP5124
PeopleSoft Contract No. 5003

PLOTTING INFORMATION

CSJ NO. _____ HIGHWAY NO. _____

MEDIA LABEL _____ OF _____ ENGINEER NO. _____

PLOTTING INSTRUCTIONS:

COLOR TABLES

PEN TABLES

CELL LIBRARIES

PLAN SHEETS (DGN.FILES)

PARCEL SKETCHES (DGN FILES WITH DIFFERENT DESC)

EXAMPLE DOCUMENTATION

AVAILABLE AT YOUR REQUEST

- Cell Library
- Plotting Pen Tables
- Menus
- Seed Files

ENGINEER STANDARDS MEDIA DOCUMENTATION

This Media contains standard MicroStation cell libraries, plotting pen tables, menus, and seed files used by the Houston District of the Texas Department of Transportation and is provided to Engineer Contracting Projects.

DRAFTING STANDARDS AND GRAPHIC SEED FILES:

http://www.dot.state.tx.us/isd/geopak/STATEcadd.htm

CELL LIBRARIES:

FILE NAME	DESCRIPTION
e_sheet.cel	Standard Sheets for English Projects Cell Library
advplan.cel	Advanced Planning Cell Library
gdb1000.cel	Houston District Standard Cell Library
schplan.cel	Schematic Planning cell Library
sign.cel	Sign Cell Library

WORKSTATION COLOR TABLES:

FILE NAME	DESCRIPTION
32color.ctb	16 Colors Color Table
v256color.ctb	256 Colors Color Table (Houston District Standard)
schplot.ctb	Advance Planning Color Table

FONT LIBRARY:

FILE NAME	DESCRIPTION
STATE.rsc	Standard Font Library

GRAPHIC SAMPLE FILES:

FILE NAME	DESCRIPTION
192gt01.dgn	Sample Houston District Title Sheet
192pp06.dgn	Major Freeway Section (portion of State Highway 6)
192pp01.dgn	Non-freeway Section (portion of State Highway 6)
dist12.dgn	Reference file for 192gt01.dgn
d12ant.dgn	Reference file for 192gt01.dgn
192r2d01.dgn	Reference file for 192gt01.dgn, 192pp06.dgn, and 192pp01.dgn
192ral01.dgn	Reference file for 102gt01.dgn, ,192pp06.dgn and 192pp0`.dgn
192rg01.dgn	Reference file for 192gt01.dgn, and 192pp01.dgn

Planimetric / DTM

File Level Menu

Photogrammetry Feature	DTM	Microstation V8 Name	Level
Control			
Horizontal Control, Principal Point	no	p_control ground ctrl	1
Road			
Paved Road , Curb	yes	p_road paved, curb	2
Dirt Road	yes	p_road dirt	3
Guard Rails	no	p_road guard rail	4
Guard Fences	no	p_road guard fence	5
Guard Posts	no	p_road guard post	7
Concrete Barrier	no	p_road conc barrier	6
Paint Stripe Solid and Dashed	yes	p_road paint stripe	62
Bridge End	yes	p_road bridge end	9
Cattle Guard	no	p_road cattle guard	16
Overhead Sign	no	p_road overhead sign	7
General Road Feature	no	p_road general feature	7
Railroad			
Railroad Track RR Controls	no	p_railroad rr control	10
Drainage			
Concrete Dam	yes	p_drainage conc dam	27
Concrete Drain	yes	p_drainage conc drain	28
Earthen Dam	yes	p_drainage earthen dam	26
Riprap	yes	p_drainage riprap	8
Culvert	yes	p_drainage culvert	9
Inlet	yes	p_drainage inlet	9
Water	yes	p_drainage water	25
Marsh	yes	p_drainage marsh	24
Structure			
Building	no	p_structure building	11
Ruin	no	p_structure ruins	12
Sidewalk	no	p_structure sidewalk	13
Slab	no	p_structure slab	14
Porch, Deck	no	p_structure porch	15
Stairs; Steps	no	p_structure stairs	16
Fence, Gate, Post	no	p_structure fence	17
Retaining Wall	no	p_structure ret wall	18
Wall	no	p_structure wall	18
Cemetery	no	p_structure cemetery	23
Billboard	no	p_structure billboard	21
Sign, Sign Pole, Sign Post	no	p_structure sign	21
Antenna, Cellular Tower, Satellite Dish	no	p_structure antenna	20
Windmill	no	p_structure windmill	23

Flag Pole	no	p_structure flag pole	20
Pipes	no	p_structure pipe	23
Tank	no	p_structure tank	23
Area Under Construction	no	p_structure constr area	12
General, AC Unit,Goal Large,Small Circle	no	p_structure general	23
Unidentified Feature	no	p_structure unidentified	23
Utility			
Fire Hydrant	no	p_utility fire hydrant	20
Manhole	no	p_utility manhole	20
Marker, Meter, Valve	no	p_utility marker	20
Transmission Tower, transmission Line	no	p_utility trans tower	20
Pipeline	no	p_utitlity pipeline	22
General, Pole,Pole LP, TFP, LP			
Traffic Light, Gas Light	no	p_utility general pole	20
Vegetation			
Woods	no	p_veg woods	29
Tree	no	p_veg tree	29
Tree Farm	no	p_veg tree farm	30
Tree Orchard	no	p_veg tree orchard	29
Palm	no	p_veg palm	29
Digital Terrain Model (DTM)			
Breakline	yes	p_dtm breakline	40
General Breakline	yes	p_dtm general breakline	53
Retaining Wall Breakline	yes	p_dtm retaining wall	48
Sidewalk Breakline	yes	p_dtm sidewalk	43
Mass Points	yes	p_dtm mass points	38
Water Obscured	yes	p_dtm water obscured	45
Obscured Area	yes	p_dtm obscured area	41
Pit and Fill Area	yes	p_dtm pit or fill area	24
Stock Pile	yes	p_dtm stock pile	19

ATTACHMENT H-FG

Disadvantaged Business Enterprise (DBE)
for Federal-Aid Professional or Technical Services Contracts

1) **PURPOSE.** The purpose of this attachment is to carry out the U.S. Department of Transportation's (DOT) policy of ensuring nondiscrimination in the award and administration of DOT assisted contracts and creating a level playing field on which firms owned and controlled by minority or socially and economically disadvantaged individuals can compete fairly for DOT assisted contracts.
2) **POLICY.** It is the policy of the DOT and the Texas Department of Transportation (henceforth the "Department") that Disadvantaged Business Enterprises (DBEs) as defined in 49 CFR Part 26, Subpart A and the Department's Disadvantaged Business Enterprise Program, shall have the opportunity to participate in the performance of contracts financed in whole or in part with Federal funds. Consequently, the Disadvantaged Business Enterprise requirements of 49 CFR Part 26, and the Department's Disadvantaged Business Enterprise Program, apply to this contract as follows.
   a. The Provider will offer Disadvantaged Business Enterprises, as defined in 49 CFR Part 26, Subpart A and the Department's Disadvantaged Business Enterprise Program, the opportunity to compete fairly for contracts and subcontracts financed in whole or in part with Federal funds. In this regard, the Provider shall make a good faith effort to meet the Disadvantaged Business Enterprise goal for this contract.
   b. The Provider and any subprovider(s) shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Provider shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. The requirements of this Special Provision shall be physically included in any subcontract.
   c. When submitting the contract for execution by the Department, the Provider must complete and furnish Exhibit H-1 which lists the commitments made to certified DBE subprovider(s) that are to meet the contract goal and Exhibit H-2 which is a commitment agreement(s) containing the original signatures of the Provider and the proposed DBE(s). For Work Authorization Contracts, Exhibit H-1 is required at the time of submitting the contract for execution by the Department. Exhibit H-2 will be required to be completed and attached with each work authorization number that is submitted for execution, if the DBE will be performing work. Any substitutions or changes to the DBE subcontract amount shall be subject to prior written approval by the Department. If non-DBE subprovider is performing work, insert N/A (not applicable) on the line provided.
   d. Failure to carry out the requirements set forth above shall constitute a material breach of this contract and may result; in termination of the contract by the Department; in a deduction of the amount of DBE goal not accomplished by DBEs from the money due or to become due to the Provider, not as a penalty but as liquidated damages to the Department; or such other remedy or remedies as the Department deems appropriate.
3) **DEFINITIONS.**
   a. "Department" means the Texas Department of Transportation (TxDOT).
   b. "Federal-Aid Contract" is any contract between the Texas Department of Transportation and a Provider which is paid for in whole or in part with U. S. Department of Transportation (DOT) financial assistance.
   c. "Provider" is any individual or company that provides professional or technical services.
   d. "DBE Joint Venture" means an association a DBE firm and one (1) or more other firm(s) to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract and whose share in the capital contribution, control, management, risks and profits of the joint venture are commensurate with its ownership interest.
   e. "Disadvantaged Business Enterprise (DBE)" means a firm certified as such by the Department in accordance with 49 CFR Part 26.
   f. "Good Faith Effort" means efforts to achieve a DBE goal or other requirement of this Special Provision which, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement.

g. "Race-neutral DBE Participation" means any participation by a DBE through customary competitive procurement procedures.

4) **PERCENTAGE GOAL.** The goal for Disadvantaged Business Enterprise (DBE) participation in the work to be performed under this contract is _____% of the contract amount.

5) **PROVIDER'S RESPONSIBILITIES.** A DBE prime may receive credit toward the DBE goal for work performed by his-her own forces and work subcontracted to DBEs. A DBE prime must make a good faith effort to meet the goals. In the event a DBE prime subcontracts to a non-DBE, that information must be reported to the Department.

a. A Provider who cannot meet the contract goal, in whole or in part, shall document the "Good Faith Efforts" taken to obtain DBE participation. The following is a list of the types of actions that may be considered as good faith efforts. It is not intended to be a mandatory checklist, nor is it intended to be exclusive or exhaustive. Other factors or types of efforts may be relevant in appropriate cases.

(1) Soliciting through all reasonable and available means the interest of all certified DBEs who have the capability to perform the work of the contract. The solicitation must be done within sufficient time to allow the DBEs to respond to it. Appropriate steps must be taken to follow up initial solicitations to determine, with certainty, if the DBEs are interested.

(2) Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Provider might otherwise prefer to perform the work items with its own forces.

(3) Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(4) Negotiating in good faith with interested DBEs by making a portion of the work available to DBE subproviders and suppliers and selecting those portions of the work or material needs consistent with the available DBE subproviders and suppliers.

(5) The ability or desire of the Provider to perform the work of a contract with its own organization does not relieve the Provider's responsibility to make a good faith effort. Additional costs involved in finding and using DBEs is not in itself sufficient reason for a Provider's failure to meet the contract DBE goal, as long as such costs are reasonable. Providers are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

(6) Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities.

(7) Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Provider.

(8) Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials or related assistance or services.

(9) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBEs.

(10) If the Department's Director of the Business Opportunity Programs Office determines that the Provider has failed to meet the good faith effort requirements, the Provider will be given an opportunity for reconsideration by the Director of the appropriate Division.

NOTE: The Provider must not cause or allow subproviders to bid their services.

b. The preceding information shall be submitted directly to the Chair of the Consultant Selection Team responsible for the project.

c. The Provider shall make all reasonable efforts to honor commitments to DBE subproviders named in the commitment submitted under Section 2.c. of this attachment. Where the Provider terminates or removes a DBE subprovider named in the initial commitment, the Provider must demonstrate on a case-by-case basis to the satisfaction of the department that the originally designated DBE was not able or willing to perform.

d. The Provider shall make a good faith effort to replace a DBE subprovider that is unable or unwilling to perform successfully with another DBE, to the extent needed to meet the contract goal. The Provider shall

submit a completed Exhibit H-2 Form for the substitute firm(s). Any substitution of DBEs shall be subject to prior written approval by the Department. The Department may request a statement from the firm being replaced concerning its replacement prior to approving the substitution.

e. The Provider shall designate a DBE liaison officer who will administer the DBE program and who will be responsible for maintenance of records of efforts and contacts made to subcontract with DBEs.
f. Providers are encouraged to investigate the services offered by banks owned and controlled by disadvantaged individuals and to make use of these banks where feasible.

6) **ELIGIBILITY OF DBEs.**

a. The Department certifies the eligibility of DBEs, DBE joint ventures and DBE truck-owner operators to perform DBE subcontract work on DOT financially assisted contracts.
b. This certification will be accomplished through the use of the appropriate certification schedule contained in this Department's DBE program.
c. The Department publishes a Directory of Disadvantaged Business Enterprises containing the names of firms that have been certified to be eligible to participate as DBEs on DOT financially assisted contracts. The directory is available from the Department's Business Opportunity Programs Office. The Texas Unified Certification Program DBE Directory can be found on the Internet at: http://www.dot.state.tx.us/services/business_opportunity_programs/tucp_dbe_directory.htm .
d. Only DBE firms certified at the time the contract is signed or at the time the commitments are submitted are eligible to be used in the information furnished by the Provider as required under Section 2.c. and 5.d. above. For purposes of the DBE goal on this contract, DBEs will only be allowed to perform work in the categories of work for which they were certified.

7) **DETERMINATION OF DBE PARTICIPATION.**

A firm must be an eligible DBE and perform a professional or technical function relating to the project. Once a firm is determined to be an eligible DBE, the total amount paid to the DBE for work performed with his/her own forces is counted toward the DBE goal. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the subprovider is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.

A DBE subprovider may subcontract no more than 70% of a federal aid contract. The DBE subprovider shall perform not less than 30% of the value of the contract work with assistance of employees employed and paid directly by the DBE; and equipment owned or rented directly by the DBE. DBE subproviders must perform a commercially useful function required in the contract in order for payments to be credited toward meeting the contract goal. A DBE performs a commercially useful function when it is responsible for executing the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. When a DBE is presumed not to be performing a commercially useful function, the DBE may present evidence to rebut this presumption.

A Provider may count toward its DBE goal a portion of the total value of the contract amount paid to a DBE joint venture equal to the distinct, clearly defined portion of the work of the contract performed by the DBE.

Proof of payment, such as copies of canceled checks, properly identifying the Department's contract number or project number may be required to substantiate the payment, as deemed necessary by the Department.

8) **RECORDS AND REPORTS.**

a. After submission of the initial commitment reported (Exhibit H-1), required by Section 2.c. of this attachment, the Provider shall submit Monthly Progress Assessment Reports (Exhibit H-3), after contract work begins, on DBE involvement to meet the goal and for race-neutral participation. One copy of each report is to be sent to the Department's Business Opportunity Programs Office monthly, in addition one copy is to be submitted with the Provider's invoice. **Only actual payments made to subproviders are to be reported.** These reports will be required until all subprovider activity is completed. The Department may

verify the amounts being reported as paid to DBEs by requesting copies of canceled checks paid to DBEs on a random basis.

b. DBE subproviders should be identified on the report by name, type of work being performed, the amount of actual payment made to each during the billing period, cumulative payment amount and percentage of the total contract amount. These reports will be due within fifteen (15) days after the end of a calendar month. Reports are required even when no DBE activity has occurred in a billing period.
c. All such records must be retained for a period of seven (7) years following final payment or until any investigation, audit, examination, or other review undertaken during the seven (7) years is completed, and shall be available at reasonable times and places for inspection by authorized representatives of the Department or the DOT.
d. Prior to receiving final payment, the Provider shall submit a Final Report (Exhibit H-4), detailing the DBE payments. The Final Report is to be sent to the Department's Business Opportunity Programs Office and one (1) copy to be submitted with the Provider's final invoice. If the DBE goal requirement is not met, documentation of the good faith efforts made to meet the goal must be submitted with the Final Report.

9) **COMPLIANCE OF PROVIDER.** To ensure that DBE requirements of this DOT-assisted contract are complied with, the Department will monitor the Provider's efforts to involve DBEs during the performance of this contract. This will be accomplished by a review of Monthly Progress Assessment Reports (Exhibit H-3), submitted to the Department's Business Opportunity Programs Office by the Provider indicating his progress in achieving the DBE contract goal, and by compliance reviews conducted by the Department. The Monthly Progress Assessment Report (Exhibit H-3) must be submitted at a minimum monthly to the Business Opportunity Programs Office, in addition to with each invoice to the appropriate agency contact.

The Provider shall receive credit toward the DBE goal based on actual payments to the DBE subproviders with the following exceptions and only if the arrangement is consistent with standard industry practice. The Provider shall contact the Department if he/she withholds or reduces payment to any DBE subprovider.

(1) A DBE firm is paid but does not assume contractual responsibility for performing the service;
(2) A DBE firm does not perform a commercially useful function;
(3) Payment is made to a DBE that cannot be linked by an invoice or canceled check to the contract under which credit is claimed;
(4) Payment is made to a broker or a firm with a brokering-type operation;
(5) Partial credit is allowed, in the amount of the fee or commission provided the fee or commission does not exceed that customarily allowed for similar services, for a bona fide service, such as professional, technical, consultant, or managerial services, and assistance in the procurement of essential personnel, facilities, equipment, materials, or supplies required for performance of the contract.

A Provider's failure to comply with the requirements of this Special Provision shall constitute a material breach of this contract. In such a case, the Department reserves the right to terminate the contract; to deduct the amount of DBE goal not accomplished by DBEs from the money due or to become due the Provider, not as a penalty but as liquidated damages to the Department; or such other remedy or remedies as the Department deems appropriate.

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Legacy Contract No. 12-5SDP5124
Peoplesoft Contract No.

ATTACHMENT H-FN

Disadvantaged Business Enterprise (DBE) for Race-Neutral Professional or Technical Services Contracts

It is the policy of the U. S. Department of Transportation (DOT) that DBEs as defined in 49 CFR Part 26, Subpart A, be given the opportunity to compete fairly for contracts and subcontracts financed in whole or in part with Federal funds and that a maximum feasible portion of the Department's overall DBE goal be met using race-neutral means. Consequently, if there is no DBE goal, the DBE requirements of 49 CFR Part 26, apply to this contract as follows:

The Provider will offer DBEs as defined in 49 CFR Part 26, Subpart A, the opportunity to compete fairly for contracts and subcontracts financed in whole or in part with federal funds. Race-Neutral DBE participation on projects with no DBE goal should be reported on the Exhibit H-3 Form. Payments to DBEs reported on Exhibit H-3 are subject to the following requirements:

DETERMINATION OF DBE PARTICIPATION.
A firm must be an eligible DBE and perform a professional or technical function relating to the project. Once a firm is determined to be an eligible DBE, the total amount paid to the DBE for work performed with his/her own forces must be reported as race-neutral DBE participation. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work should not be reported unless the subcontractor is itself a DBE.

A DBE subprovider may subcontract no more than 70% of a federal aid contract. The DBE subprovider shall perform not less than 30% of the value of the contract work with assistance of employees employed and paid directly by the DBE; and equipment owned or rented directly by the DBE. DBE subproviders must perform a commercially useful function required in the contract. A DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, and installing (where applicable) and paying for the material itself. When a DBE is presumed not to be performing a commercially useful function, the DBE may present evidence to rebut this presumption.

A Provider must report a portion of the total value of the contract amount paid to a DBE joint venture equal to the distinct, clearly defined portion of the work of the contract performed by the DBE.

Proof of payment, such as copies of canceled checks, properly identifying the Department's contract number or project number may be required to substantiate the payment, as deemed necessary by the Department.

The Provider and any subprovider shall not discriminate on the basis of race, color, national origin or sex in the award and performance of contracts. These requirements shall be physically included in any subcontract.

Failure to carry out the requirements set forth above shall constitute a material breach of this contract and, may result in termination of the contract by the Department or other such remedy as the Department deems appropriate.

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Legacy Contract No. 12-5SDP5124
Peoplesoft Contract No.

ATTACHMENT H-SG

Historically Underutilized Business
for State Funded Professional or Technical Services Contracts
HUB Goal Assigned-State of Texas Subcontracting Plan Required

1) **POLICY.** It is the policy of the Department to ensure that HUBs shall have an equal opportunity to participate in the performance of contracts; to create a level playing field on which HUBs can compete fairly for contracts and subcontracts; to ensure nondiscrimination on the basis of race, color, national origin, or gender in the award and administration of contracts; to help remove barriers to the participation of HUBs in department contracts; and, to assist in the development of firms that can compete successfully in the market place outside the HUB program. Consequently, the HUB requirements of the Department's HUB Program apply to this contract as follows:
   (1) The Provider agrees to insure that they shall take all necessary and reasonable steps to meet the HUB goal for this contract.
      a. The Provider and any subprovider(s) shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of contracts.
      b. When submitting the contract for execution by the Department, the Provider must complete and furnish Exhibit H-1 which lists the commitments made to all subproviders, including certified HUB subprovider(s) that are to meet the contract goal, and Exhibit H-2 which is a commitment agreement(s) containing the original signatures of the Provider and HUB(s) that were indicated in the original submitted State of Texas HUB Subcontracting Plan (HSP) in Section 8. For Work Authorization Contracts, Exhibit H-1 is required at the time of submitting the contract for execution by the Department. Exhibit H-2 will be required to be completed and attach with each work authorization number that is submitted for execution, if the HUB will be performing work. If non-HUB subprovider is performing work, insert N/A (not applicable) on the line provided. A prime must allow a HUB maximum opportunity to perform the work by not creating unnecessary barriers or artificial requirements for the purpose of hindering a HUB's performance under the contract. Any substitutions or changes to the HSP, in addition to any changes to the original contract award, shall be subject to prior written approval by the Department. If there are any changes to the subproviders during the contract term, the Provider must furnish a Revised Exhibit H-1 showing the revised commitment of all subproviders.
      c. Failure to carry out the requirements set forth above shall constitute a breach of contract and may result in a letter of reprimand; in termination of the contract by the Department; in a deduction from money due or to become due to the Provider, not as a penalty but as damages to the Department's HUB Program; or such other remedy or remedies as the Department deems appropriate.
2) **DEFINITIONS.**
   a. "Department" means the Texas Department of Transportation (TxDOT).
   b. "Contract" is the agreement between the Texas Department of Transportation and a Provider.
   c. "Provider" is any individual or company that provides professional or technical services.
   d. "Joint Venture" means an association of two or more businesses to carry out a single business enterprise for profit which combines their property, capital, efforts, skills and knowledge.
   e. "Historically Underutilized Business (HUB)" means any business so certified by the Texas Facilities Commission.
3) **PERCENTAGE GOAL.** The goal for Historically Underutilized Business (HUB) participation in the work to be performed under this contract is _____% of the contract amount.
4) **PROVIDER'S RESPONSIBILITIES.** A Provider (HUB or non-HUB) must perform a minimum of 30% of the contract with its employees (as defined by the Internal Revenue Service). The contract is subject to the HSP Good Faith Effort Requirements.
   a. A Provider who cannot meet the contract goal, in whole or in part, should have documented any of the following and other efforts made as a "Good Faith Effort" to obtain HUB participation.
      (1) Whether the prime advertised in general circulation, trade association, and/or minority/women focus media concerning subcontracting opportunities.

(2) Whether the prime provided written notice to at least three (3) qualified HUBs allowing sufficient time for HUBs to participate effectively.
(3) Whether the prime documented reasons for rejection or met with the rejected HUB to discuss the rejection.
(4) Whether the prime provided qualified HUBs with adequate information about bonding, insurance, the plans, the specifications, scope of work and requirements of the contract.
(5) Whether the prime negotiated in good faith with qualified HUBs, not rejecting qualified HUBs who are also the lowest responsive bidder.
(6) Whether the prime used the services of available minority and women community organizations, contractor's groups, local, state, and federal business assistance offices, and other organizations that provide support services to HUBs.

NOTE: The Provider must not cause or allow subproviders to bid their services.

b. The preceding information shall be submitted directly to the Chair of the Consultant Selection Team responsible for the contract.
c. The Provider shall make all reasonable efforts to honor commitments to HUB subproviders named in the original HSP in Section 8. Where the Provider terminates or removes a HUB subprovider named in the initial commitment, the Provider must demonstrate on a case-by-case basis to the satisfaction of the Department that the originally designated HUB was not able or willing to perform. The term "unable" includes, but is not limited to, a firm that does not have the resources and expertise to finish the work and/or a firm that substantially increases the time to complete the project.
d. The Provider shall make all reasonable efforts to replace a HUB subprovider that is unable or unwilling to perform successfully with another HUB and must meet the HSP Good Faith Effort Requirements. Any substitution of HUBs shall be subject to prior written approval by the Department. The Department will request a statement from the firm being replaced concerning its replacement prior to approving the substitution. If there are any changes to the subproviders during the contract term, the Provider must furnish a Revised Exhibit H-1 showing the revised commitment of all subproviders.
e. The Provider shall designate a HUB liaison officer who will administer the Provider's HUB program and who will be responsible for maintenance of records of efforts and contacts made to subcontract with HUBs.

5) **ELIGIBILITY OF HUBs.**

a. The Texas Facilities Commission (TFC) certifies the eligibility of HUBs.
b. The TFC maintains a directory of certified HUBs. The HUB Directory is available through the Department's Business Opportunity Programs Office and through the Internet at the TFC's Website (http://www.tfc.state.tx.us/divisions/commissionadmin/prog/HUB).
c. Only HUB firms certified and identified in specific categories and classes at the time the contract is signed or at the time the commitments are submitted are eligible to be used in the information furnished by the Provider as required under Section 2.c. above.
d. If during the course of the contract it becomes necessary to substitute another HUB firm for a firm named in the information submitted by the Provider as required by Section 2.c. above, then only certified HUBs will be considered eligible as a substituted firm. The Provider's written request for substitutions of HUB subproviders shall be accompanied by a detailed explanation, which should substantiate the need for a substitution. The Department will verify the explanation with the HUB firm being replaced before giving approval of the substitution. If there are any changes to the subproviders during the contract term, the Provider must furnish a Revised Exhibit H-1 showing the revised commitment of all subproviders.
e. The 73rd Legislature passed Texas Civil Statutes, Article 601i, relative to contracts between governmental entities and certain disadvantaged businesses. The Statute provides for civil penalties for persons who falsely claim disadvantaged business status and for the general contractor who knowingly contracts with a person claiming to be a disadvantaged business.

6) **DETERMINATION OF HUB PARTICIPATION.**

A firm must be an eligible HUB and perform a professional or technical function relating to the project. Proof of payment, such as copies of canceled checks, properly identifying the Department's contract number or project number may be required to substantiate the payment, as deemed necessary by the Department. A HUB subprovider, with prior written approval from the Department, may subcontract 70% of a contract as long as the

HUB subprovider performs a commercially useful function. All subcontracts shall include the provisions required in the subcontract and shall be approved as to form, in writing, by the Department prior to work being performed under the subcontract. A HUB performs a commercially useful function when it is responsible for a distinct element of the work of a contract; and actually manages, supervises, and controls the materials, equipment, employees, and all other business obligations attendant to the satisfactory completion of contracted work. If the subcontractor uses an employee leasing firm for the purpose of providing salary and benefit administration, the employees must in all other respects be supervised and perform on the job as if they were employees of the subcontractor.

7) **COMPLIANCE OF PROVIDER.**

8) To ensure that HUB requirements of this contract are complied with, the Department will monitor the Provider's efforts to involve HUBs during the performance of this contract. This will be accomplished by a review of the monthly State of Texas HUB Subcontracting Plan Prime Contractor Progress Assessment Report (Exhibit H-6) submitted to the Business Opportunity Programs Office by the Provider indicating his/her progress in achieving the HUB contract goal, and by compliance reviews conducted by the Department. The State of Texas HUB Subcontracting Plan Prime Contractor Progress Assessment Report (Exhibit H-6) must be submitted at a minimum monthly to the Business Opportunity Programs Office, in addition to with each invoice to the appropriate agency contact.

The Provider shall receive credit toward the HUB goal based on actual payments to the HUB subproviders with the following exceptions and only if the arrangement is consistent with standard industry practice.

(1) Payments to brokers or firms with a brokering type operation will be credited only for the amount of the commission;
(2) Payments to a joint venture will not be credited unless all partners in the joint venture are HUBs;
(3) Payments to a HUB subprovider who has subcontracted a portion of the work required under the subcontract will not be credited unless the HUB performs a commercially useful function;
(4) Payments to a HUB will not be credited if the firm does not provide the goods or perform the services paid for;
(5) Payments made to a HUB that cannot be linked by an invoice or canceled check to the contract under which credit is claimed will not be credited.

A Provider must not withhold or reduce payments to any HUB without a reason that is accepted as standard industry practice. A HUB prime or subprovider must comply with the terms of the contract or subcontract. Work products, services, and commodities must meet contract specifications whether performed by a prime or subprovider.

A Provider's failure to meet the HUB goal and failure to demonstrate to the Department's satisfaction sufficient "Good Faith Effort" on his/her part to obtain HUB participation shall constitute a breach of contract. In such a case, the Department reserves the right to issue a letter of reprimand; to deduct the amount of HUB goal not accomplished by HUBs from the money due or to become due the Provider, not as a penalty but as damages to the Department's HUB program; or such other remedy or remedies as the Department deems appropriate.

9) **RECORDS AND REPORTS.**

a. After submission of the initial commitment (Exhibit H-1), required by Section 2.c. of this attachment, the Provider shall submit State of Texas HUB Subcontracting Plan Prime Contractor Progress Assessment Report (Exhibit H-6) at a minimum monthly, after contract work begins, on subcontracting involvement. One copy of the State of Texas HUB Subcontracting Plan Prime Contractor Progress Assessment Report (Exhibit H-6) is to be sent to the Business Opportunity Programs Office of the Department monthly. In addition, the State of Texas HUB Subcontracting Plan Prime Contractor Progress Assessment Report (Exhibit H-6) must be submitted with the Provider's invoice. All payments made to subproviders are to be reported. **These State of Texas HUB Subcontracting Plan Prime Contractor Progress Assessment Reports are required monthly even during months when no payments to subproviders have been made.** The State of Texas HUB Subcontracting Plan Prime Contractor Progress Assessment Report will be

required until all work on the contract has been completed. The Department may verify the amounts being reported as paid to HUBs by requesting copies of canceled checks paid to HUBs on a random basis.

b. Subproviders should be identified on the State of Texas HUB Subcontracting Plan Prime Contractor Progress Assessment Report (Exhibit H-6) by name, the amount of actual payment made to each during the billing period, cumulative payment amount and percentage of the total contract amount.
c. All such records must be retained for a period of seven years following final payment, or until an investigation, audit, examination, or other review undertaken during the seven years, and shall be available at reasonable times and places for inspection by authorized representatives of the Department and other agencies.
d. Prior to receiving final payment, the Provider shall submit a Final Report (Exhibit H-4), detailing the subprovider payments to the Business Opportunity Programs Office of the Department, and one copy to the Department with the Provider's final invoice.

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Legacy Contract No. 12-5SDP5124
Peoplesoft Contract No.

ATTACHMENT H-SN

Historically Underutilized Business (HUB)
for State Funded Professional or Technical Services Contracts
No State of Texas HUB Subcontracting Plan Required

POLICY

It is the policy of the Department to ensure that HUBs shall have an equal opportunity to participate in the performance of contracts; to create a level playing field on which HUBs can compete fairly for contracts and subcontracts; to ensure nondiscrimination on the basis of race, color, national origin, or gender in the award and administration of contracts; to help remove barriers to the participation of HUBs in department contracts; and, to assist in the development of firms that can compete successfully in the market place outside the HUB program.

Subcontracting participation on projects with no HUB Subcontracting Plan Required should be reported on the State of Texas HUB Subcontracting Plan Prime Contractor Progress Assessment Report, the Exhibit H-6 Form. Payment to non-HUBs subproviders must be reported on Exhibit H-6. Payments to HUBs reported on Exhibit H-6 are subject to the following requirements:

DETERMINATION OF HUB PARTICIPATION.

A firm must be an eligible HUB and perform a professional or technical function relating to the project. Once a firm is determined to be an eligible HUB, the total amount paid to the HUB should be reported as race-neutral HUB participation.

A HUB subprovider may subcontract no more than 70% of a contract. The HUB subprovider shall perform not less than 30% of the value of the contract work with assistance of employees employed and paid directly by the HUB; and equipment owned or rented directly by the HUB.

A provider must report a portion of the total value of the contract amount paid to a HUB joint venture equal to the distinct, clearly defined portion of the work of the contract performed by the HUB.

Proof of payment, such as copies of canceled checks, properly identifying the Department's contract number or project number may be required to substantiate the payment, as deemed necessary by the Department.

The provider and any subprovider shall not discriminate on the basis of race, color, national origin or sex in the award and performance of contracts. These requirements shall be physically included in any subcontract.

REQUIRED FORMS.

If subcontractors are used under the contract that has no stated HUB goal, Exhibits H-1, H-2, H-4 and H-6 are required. Exhibits H-1 and H-6 are required if no subcontractors are being used to perform work under this contract.

State of Texas HUB Subcontracting Plan Prime Contractor Progress Assessment Report (Exhibit H-6) **is required monthly even when no subcontracting activity has occurred.** In addition, State of Texas HUB Subcontracting Plan Prime Contractor Progress Assessment Report (Exhibit H-6) should be submitted with the Provider's invoice.

12/06 HU

Legacy Contract No. 12-5SDP5124
Peoplesoft Contract No.

EXHIBIT H-1

Texas Department of Transportation
Subprovider Monitoring System
Commitment Worksheet

Contract #: 125SDP5124 Assigned Goal: 23.7 % State Funded Yes

Prime Provider: AECOM Technical Services, Inc. Total Contract Amount: $4,510,662.26

Prime Provider Info: DBE ___ HUB ___ Both ___

Vendor ID #: 19526619226 DBE/HUB Expiration Date: N/A
(First 11 Digits Only)

If no subproviders are used on this contract, please indicate by placing "N/A" on the 1st line under Subproviders.

Subprovider(s) (List All)	Type of Work	Vendor ID # (First 11 Digits Only)	D=DBE H=HUB	Expiration Date	$ Amount or % of Work *
Aguirre & Fields, LP	Bridge & Roadway Design	17606945404	H	10.29.2017	$293,707.15
AIA Engineers, Ltd.	ITS / Illumination / Signalization/Utility Coordination	17606188799	H	03.26.2017	$249,533.21
Brown & Gay Engineers, Inc.	Traffic Engineering / ROW Mapping	17418179515			$300,895.49
Entech Civil Engineers, Inc.	Roadway Design/ Bicycle & Pedestrian	14604911694	H	05.29.2019	$281,335.21
Geotest Engineering, Inc.	Geotechnical	17420489209	H	06.30.2018	$12,454.96
IEA, Inc.	H&H Studies & Design	17110393661	H	10.24.2016	$186,113.36
RODS Surveying, Inc.	Survey / ROW Maps / H&V Controls for Aerial Mapping	17604444400	H	09.25.2017	$315,683.65
Subprovider(s) Contract or % of Work* Totals					$1,639,723.03

*For Work Authorization Contracts, indicate the % of work to be performed by each subprovider.

Total DBE **or** HUB Commitment Dollars $ 1,338,827.54

Total DBE **or** HUB Commitment Percentages of Contract 29.68 %
(Commitment Dollars and Percentages are for Subproviders only)

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Legacy Contract No. 12-5SDP5124
Peoplesoft Contract No.

EXHIBIT H-2

Texas Department of Transportation
Subprovider Monitoring System Commitment Agreement

This commitment agreement is subject to the award and receipt of a signed contract from the Texas Department of Transportation (TxDOT). ***NOTE: Exhibit H-2 is required to be attached to each contract that does not include work authorizations. Exhibit H-2 is required to be attached with each work authorization. Exhibit H-2 is also required to be attached to each supplemental work authorization. If DBE/HUB Subproviders are used, the form must be completed and signed. If no DBE/HUB Subproviders are used, indicate with "N/A" on this line: _____ and attach with the work authorization or supplemental work authorization.***

Contract #: _____ Assigned Goal: _____% Prime Provider:_____

Work Authorization (WA)#: _____ WA Amount: _____ Date: _____

Supplemental Work Authorization (SWA) #: _____ to WA #: _____ SWA Amount:_____

Revised WA Amount: _____

Description of Work *(List by category of work or task description. Attach additional pages, if necessary.)*	**Dollar Amount** *(For each category of work or task description shown.)*
Total Commitment Amount *(Including all additional pages.)*	$

IMPORTANT: The signatures of the prime and the DBE/HUB and Second Tier Subprovider, if any (both DBE and Non-DBE) and the total commitment amount must always be on the same page.

Provider Name: **Address:** **Phone # & Fax #:** **Email:**	**Name:** _____ *(Please Print)* **Title:**_____ _____ **Signature** **Date**
DBE/HUB Sub Provider **Subprovider Name:** **VID Number:** **Address:** **Phone # & Fax #:** **Email:**	**Name:** _____ *(Please Print)* **Title:**_____ _____ **Signature** **Date**
Second Tier Sub Provider **Subprovider Name:** **VID Number:** **Address:** **Phone #& Fax #:** **Email:**	**Name:** _____ *(Please Print)* **Title:**_____ _____ **Signature** **Date**

VID Number is the Vendor Identification Number issued by the Comptroller. If a firm does not have a VID Number, please enter the owner's Social Security or their Federal Employee Identification Number (if incorporated).

Legacy Contract No. 12-5SDP5124
Peoplesoft Contract No.

EXHIBIT H-4

Texas Department of Transportation
Subprovider Monitoring System
Final Report

The Final Report Form should be filled out by the Prime Provider and submitted to the Contract Manager and the Business Opportunity Programs Office for review upon completion of the contract. The report should reflect **all subcontract activity** on the project. The report will aid in expediting the final estimate for payment. If the HUB or DBE goal requirements were not met, documentation supporting good faith efforts must be submitted.

DBE Goal: _____% **OR** HUB Goal: %

Total Contract Amount: $_____ Total Contract Amount: $ _____

Contract Number:

Vendor ID #	Subprovider	Total $ Amt Paid to Date
	TOTAL	

This is to certify that _____% of the work was completed by the HUB or DBE subproviders as stated above.

_____
By: Prime Provider

_____
Per: Signature

Subscribed and sworn to before me, this _____ day of _____, 20 __

_____Notary Public _____ County

My Commission expires:_____

12/06 DBE-H4.A

HUB Subcontracting Plan (HSP)
Prime Contractor Progress Assessment Report

This form must be completed and submitted to the contracting agency each month to document compliance with your HSP.

Contract/Requisition Number: ____________ Date of Award: ____________ (mm/dd/yyyy) Object Code: ____________ (Agency Use Only)

Contracting Agency/University Name: ____________________________

Contractor (Company) Name: ____________________ State of Texas VID #: ____________

Point of Contact: ____________________ Phone #: ____________

Reporting (Month) Period: ____________ Total Amount Paid this Reporting Period to Contractor: $ ____________ -

Report HUB and Non-HUB subcontractor information

Subcontractor's Name	Subcontractor's VID or HUB Certificate Number	*Texas Certified HUB? (Yes or No)	Total Contract $ Amount from HSP with Subcontractor	Total $ Amount Paid This Reporting Period to Subcontractor	Total Contract $ Amount Paid to Date to Subcontractor	Object Code (Agency Use Only)
			$ -	$ -	$ -	
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Signature: ____________________ Title: ____________________ Date: ____________

*Note: HUB certification status can be verified on-line at: http://www2.cpa.state.tx.us/cmbl/hubonly.html Rev. 10/07